سلسلة

الأوائل

فى

الرياضيات

الصف الرابع لغات الإبتدائى ترم أول

إعداد

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the first unit
lesson (1)

Big numbers

How to read the number

- Divide the number into numerical groups
  (units - thousands - millions – billions)
- Each group contains digits (ones, tens, hundreds).
- Each numerical group is separated from the other by a comma, such as (9,876,543)
- You read the number groups from left to right, followed by their name

Big numbers		
hundred thousand	The smallest 6-digit number	100,000
million	The smallest 7-digit number	= 1,000,000 1000thousand
The ten million	The smallest 8-digit number	10,000,000
hundred million	The smallest 9-digit number	100,000,000
billion	The smallest 10-digit number	= 1,000,000,000 1000million
The ten billion	The smallest 11-digit number	10,000,000,000
hundred billion	The smallest 12-digit number	100,000,000,000

A quarter of a billion =
250 million = 250,000,000
Half a billion =
500 million = 500,000,000
Three quarters of a billion =
750 thousand = 750,000,000

A quarter of a million =
250 thousand = 250,000
Half a million =
500 thousand = 500,000
Three quarters of a million =
750 thousand = 750,000

- **Large numbers can be expressed using a place value table**

5,476,318,209											
milliards			millions			thousands			units		
H	T	O	H	T	O	H	T	O	H	T	O
		5	4	7	6	3	1	8	2	0	9

- And he reads: five billion, four hundred and seventy-six million, three hundred and eighteen thousand, two hundred and nine.

5,432,765,698 -1											
milliards			millions			thousands			units		
H	T	O	H	T	O	H	T	O	H	T	O

- read :...

....

345,351,679 -2											
milliards			millions			thousands			units		
H	T	O	H	T	O	H	T	O	H	T	O

- read :...

....

(2) Write each of the following numbers in word form

(1) : 54,246,768...

....

(2) 123,546,908... :

....

(3) 4,543,647,100... :

....

(3) Write each of the following numbers in extended form

(1) : 54,246,768 ....

....

(2) 234,654,105 .... :

....

Example 3: Complete

1- The place value of the digit 6 in the number 23,543,764 is ....
2- The value of the digit 8 in the number 462,810,333 is ....
3- 355,647= .... + ...
4- 34,000,000 + 478,000 + 546 = ...
5- 4,000,000 + 150,000 + 5 =............................
6- A 6-digit number whose tens digit is 8 is ....
7- A 5-digit number whose hundreds digit is 4 and its tens digit is 3 is.........
8- A million is the smallest number made up of .... digit

Example 4: Write the place value and the number value of each digit in the number 5,476,318,209.

1- The place value of the number 9 is .... and the value of the number 9 is..........
2- The place value of the number 0 is .... and the value of the number 0 is.........
3- The place value of the number 2 is .... and the value of the number 2 is..........
4- The place value of the number 8 is .... and the value of the number 8 is.........
5- The place value of the number 5 is .... and the value of the number 5 is..........

Example 5: - Compare using (= , < , >)			
1	The value of the number 5 in the milliard digit		The value of the number 5 in the million digit
2	The value of the number 9 in the milliard digit		The value of the number 5 is in the tens of millions
3	The value of the number 1 in the hundreds place		The value of the number 4 in the hundreds place
4	The value of the number 9 in the ones place		The value of the number 4 in the milliard digit

Example 6: - Divide numbers to make it easier to read	
1	3,200,862,147 = ... milliard and .... million and .... thousand and ....
2	1,741,000,527 = ... milliard and .... million and .... thousand and ....
3	9,301,000,000 = ... milliard and .... million and .... thousand and ....

Example 7: - Complete by writing the standard form	
1	3 milliard, 689 million, 524 thousand, 130 = ...
2	8 milliard, 100 million, 473 thousand, 10 = ...
3	milliard, 609 million, 624 thousand, 135 = ...
4	9 milliard, 5 million, 356 thousand, 10 = ...
5	4 milliard, 263 million, 12 thousand, 35 = ...

Example 8: - Read and then answer	
1	Name three different values for the number 6: ....
2	Do all digits of the number 888 have the same value? ....
3	The digit that falls in the tens of millions place in the number 1,741,000,527 is....................
5	If the value of the digit 9 is 9,000,000, then the place value is ....
6	A milliard is the smallest number made up of .... digits

Exercises (1)

313,543,768,250 -1											
milliards			millions			thousands			units		
H	T	O	H	T	O	H	T	O	H	T	O

• read :..

....

346,788,000 -2											
milliards			millions			thousands			units		
H	T	O	H	T	O	H	T	O	H	T	O

• read :..

....

(2) Write each of the following numbers in word form	
1	.... : 62,345,000 ....
2	.... : 78,432,206 ....
3	.... : 10,000,345 ....

(3) Write each of the following numbers in the extended form	
1	.... : 62,345,000 ....
2	.... : 78,432,206 ....

(4) Complete	
1	The place value of the digit 2 in the number 23,543,764 is ....
2	The value of the digit 6 in the number 462,810,333 is ....
3	311,570 = ... + ...
4	100 + 56,000 + 12,000,000 = ...
5	71 + 34,000 + 5,000,000 = ...
6	A 7-digit number whose hundreds digit is 9 is.............
7	A 5-digit number whose hundreds digit is 1 and its tens digit is 6 is.........
8	One hundred thousand is the smallest number made up of .... digits

(5) Write the place value and the number value of each digit in the number 4,752,813,906.	
1	The place value of the digit 9 is .... and the value of the digit 9 is ....
2	The place value of the digit 0 is .... and the value of the digit 0 is ....
3	The place value of the digit 2 is .... and the value of the digit 2 is ....
4	The place value of the digit 8 is .... and the value of the digit 8 is ....
5	The place value of the digit 5 is .... and the value of the digit 5 is ....
6	The place value of the digit 1 is .... and the value of the digit 1 is ....
7	The place value of the digit 3 is .... and the value of the digit 3 is ....
8	The place value of the digit 6 is .... and the value of the digit 6 is ....

Example 5: - Compare using (= , < , >)			
1	The value of the number 5 in the ones place		The value of the number 7 in the million digit
2	The value of the number 9 is in the millions place		The value of the number 3 is in the tens of millions
3	The value of the number 6 in the hundreds place		The value of the number 8 in the hundreds place

Example 6: - Divide numbers to make it easier to read	
1	7,213,200,784 = ... milliard and .... million and .... thousand and ....
2	8,735,250,520 = ... milliard and .... million and .... thousand and ....
3	6,000,642,000 = ... milliard and .... million and .... thousand and ....

Example 7: - Complete by writing the standard form	
1	21 milliard, 137 million, 749 thousand, 248 ....
2	5 milliard, 50 million, 380 thousand, 21 = ...
3	milliard, 438 million, 65 thousand, 39 =............................
4	4 milliard, 765 million, 314 thousand, 666 = ...
5	3 milliard, 310 million, 748 thousand, 734 = ...

Example 8: - Read and then answer	
1	List three different values for the number 9: ....
2	Do all digits of the number 777 have the same value?..........
3	The number that falls in the tens of millions place in the number 6,342,000,888 is ....
4	One hundred million is the smallest number made up of .... digits

Lesson (2) Change and compare values

number value

- We write the number and put zeros in front of it with the number of digits that precede it
- The value of the number changes as we move towards the left, as the value of the number increases each time by 10 times the value of the previous one.

place value

- It is the name of the digit in which the digit is located
(ones - tens – hundreds...)

- 5 in the tens is equal to 10 times the 5 in the ones: 5 x 10 = 50
- 5 in hundreds is equal to 10 times 5 in tens: 50 x 10 = 500
- 5 in millions equals 10 times 5 in hundreds of thousands

500.000 x 10 = 5.000.000

Example 1: - Notice the change in the value of the number 9 with the change in its place value	
1	The value of the digit 9 in the ones place is...............
2	The value of the digit 9 in the tens place is...............
3	The value of the digit 9 in the hundreds place is...........
4	The value of the digit 9 in the thousands place is...............
5	The value of the digit 9 in the tens of thousands place is......

Example 2: - Complete	
1	12 million = ... = ... thousand
2	6 billion = ... = ... million
3	25 thousand = ... = ... hundred = ... ten
4	45 tens of thousands = ... = ... thousand = ... ten

Example 3: - Write the place value and the digit value of the number 4 in the following numbers		
the number	place value	value
123,345		
15,868,423		
141,279,888		
1,214,623,768		
19,531,040,011		
147,999,126,000		

Example 4: - Complete	
1	A number equal to 1000 times 58 is................
2	(5 Ones and 9 tens) x 100 = ...
3	500 hundred = ... ten
4	A number 1000 times greater than 345 is ....
5	(7 Ones and 5 hundreds) x 10 = ...
6	(6 hundreds and 8 tens) x 100 = ...
7	What is the number of tens in the number 1000?
8	...........Ten = 900
9	54 thousand = ... hundred

Example 5: - Complete	
1	10 times 32 = ...
2	100 times 420 = ...
3	1,000 times 519 = ...
4	40 ten =...............
5	41 hundred =...............
6	90 thousand =...............
7	10 times .... = 200

Exercises (2)

Example 1: - Notice the change in the value of the number 8 with the change in its place value	
1	The value of the digit 8 in the billion place is..................
2	The value of the digit 8 in the tens of millions place is..........
3	The value of the digit 8 in the hundreds of millions place is..
4	The value of the digit 8 in the millions place is..................
5	The value of the digit 8 in the tens of thousands place is.....

Example 2: - Complete	
1	34 million = ... = ... thousand
2	5 billion = ... = ... million
3	46 thousand = ... = ... hundred = ... ten
4	12 tens of thousands = ... = ... thousand = ... ten
5	22 hundreds of thousands = ... = ... thousand = ... hundred

Example 3: - Complete	
1	A number equal to 100 times 65 is............
2	(2 Ones and 7 tens) x 10 = ...
3	500 thousand = ... hundred
4	A number 100 times greater than 72 is................
5	(8 Ones and 1 hundreds) x 100 =...........
6	(3 hundreds and 9 tens) x 1000 =............
7	How many hundreds are in the number 1000?..................
8	.... hundred = 8,000
9	10 times the number 32 = ...
	10 times the number 54 thousand = ...

Lesson (3-4) - Many Ways Write Composing and decomposing

standard formula

- Comms are used to show periods

For example: 3,215,679

Word form

- It is writing the number in words by dividing it from right to left as follows:
- And read from left to right as follows: 5,476,318,209
- • Five billion, four hundred and seventy-six million, three hundred and eighteen thousand, two hundred and nine.

Expanded form

- It is writing the number in the form of the sum of the values of its digits as follows:

5,476,318,209 = 5 × 1,000,000,000 + 4 × 100,000,000 + 7 × 10,000,000 + 6 × 1,000,000 +3 × 100,000 + 1 × 10,000 + 8 × 1,000 + 2 × 100 + 9 × 1

- Note The number 0 is not written in the extended form because it has no place value.

Example 1: - Write the following in the standard form	
1	500,000 + 70,000 + 3,000 + 100 + 90 + 3 = ...
2	600,000 + 50,000 + 2,000 + 700 + 5 = ...
3	80,000,000 + 5,000 +400 + 30 + 9 = ...
4	Three million seventy thousand =....................................
5	forty-three million two hundred and fourteen thousand and five = ...
Example 2: - Write the following in the extended form	
1	4,135,789 =.. ....
2	108,135,789 = ...
3	Three hundred and ninety-five thousand= ....

Example 3: - Write the following in the WORD form	
1	.... = 4,135,789 ....
2	.... = 108,135,789
3	80,000,000 + 5,000 +400 + 30 + 9 = ...
4	.... =123,345 ....
5	.... =15,868,423 ....

Composing and decomposing numers

- • The first method: - Using the extended form
- 20,006,439 = 20,000,000 + 6,000 +400 + 30 + 9
- • The second method: -
- 2,007,409 = (1,000,000×2) + (1,000×7) +(100×4) +(1×9)

Example (1) Choose the correct answer							
(1)	3,000 + 100 + 90 + 3 = ...						
(A)	3,913	(B)	3,193	(C)	9,133	(D)	3,391
(2)	(10,000×2) + (1,000×7) +(100×4) +(1×9)=...................						
(A)	72,409	(B)	27,904	(C)	2,749	(D)	27,409
(3)	One million 235 thousand and 127=................						
(A)	1,235,127	(B)	1,532,127	(C)	1,235,721	(D)	1,200,127
(4)	Three million three thousand and three = ...						
(A)	3,003,030	(B)	3,300,003	(C)	3,003,003	(D)	3,033,000

Exercises (3)

Example 1: - Write the following in the standard form	
1	800,000 + 30,000 + 3,000 + 400 + 3 = ...
2	400,000 + 50,000 + 2,000 + 700 + 2 + 50 = ...
3	5,000,000 + 7,000 + 400 + 30 + 9 = ...
4	Seven million forty-five thousand =..........................

Example 2: - Write the following in the extended form	
1	.... = 2,523,204 ....
2	.... = 134,740,006 ....
3	Three hundred and ninety-five million= ....
4	seventy-five million three thousand five = ...

Example 3: - Write the following in the WORD form	
1	.... = 4,135,789 ....
2	.... = 108,135,789
3	80,000,000 + 5,000 +400 + 30 + 9 = ...

Example 4: - Write the following in the decomposed form	
1	.... = 4,135,789 ....
2	80,000,000 + 5,000 +400 + 30 + 9 = ...

Lesson (5-6) Compare numbers in different forms

•To compare any two numbers, we count the digits of each of the two numbers, then follow the following

If the number of digits of each of the two numbers is different, then the number whose number of digits is greater is the larger number.

Example 1: - Compare using (= , < , >)			
1	4,788		100
2	134,100		6,022,624

- **If the number of digits of each of the two numbers is equal, then we compare the values of the digits of each of the two numbers from left to right.**

Example 2: - Compare using (= , < , >)			
1	844,257		831,983
2	981,345		944,500

• Comparing large numbers in different forms:

•We put both numbers in the standard form, and then perform the comparison process.

Example 3: - Compare using (= , < , >)			
1	Five hundred and sixty-three thousand nine hundred and eighty-five		500,000 + 70,000 + 4,000 + 800 + 10 + 9
	....		....
2	Five million four hundred and three		+ 2,000 + 700 + 2 + 50 400,000 + 50,000
	....		....

Example 4: - Compare using (= , < , >)							
1	741,100,636		741,100,616	6	7,100,616		7,100,616
2	854,200,142		214,987,741	7	142,200		142,214
3	200,432,839		200,432,347	8	17,987		71,987
4	100,100,000		100,452,000	9	536,964		143,999
5	35,987,214		35,214,000	10	8,300,523		8,002,275

Example 5: - Complete	
1	Find a number in the tens of thousands less than 457,100,741 =...
2	Find a number in hundreds of millions that is greater than 532,734,122 =...
3	Find a number in the billions that is less than 7,100,324,789=...
4	Find a number in tens of millions that is less than 100,324,789=...
5	Find a number in the hundreds less than 324,789=.............

Example 6: - Compare using (= , < , >)			
1	6 + 66 + 888 + 100,000		4 + 10 + 123 + 10,000
2	11 + 764 + 99,000,000		11 + 345 + 400,000,000
3	1 + 22 + 6,456 + 788,000		1 + 89 + 7,000 + 416,000
4	900 + 100,000 + 90,000,000		900 + 400,000 + 200,000
5	8 + 700 + 6,000 + 400,000		8 + 400 + 7,000 + 300,000
6	Seven million		Five million four hundred and three
7	Four billion one hundred thousand		Four billion 100 thousand
8	8,539,541		146,329,875
9	4 billion 123 million 100 thousand		4 billion 426 million 400 thousand
10	121,374		3,219,874
11	100,147,963		100,147,965

Exercises (4)

Example 1: - Compare using (= , < , >)							
1	643,100,636		873,100,616	6	5,516,100		5,224,616
2	21,200,142		12,987,741	7	167,200		625,256
3	637,432,89		156,000,437	8	17,713		41,987
4	2,634,000		2,452,000	9	25,964		13,999
5	76,000,000		41,214,000	10	8,300,612		8,250,999

Example 2: - Complete	
1	Find a number in the tens of thousands less than 100,741 = ...
2	Find a number in the billions that is greater than 532,734,122 = ...
3	Find a number in the billions that is less than 9,451,532,000 = ...
4	Find a number in the tens of thousands less than 324,789 = ...
5	Find a number in the tens that is less than 789 = ...

Example 3: - Compare using (= , < , >)			
1	1 + 61 + 145 + 400,000		4 + 10 + 999 + 50,000
2	11 + 256 + 77,000,000		11 + 156 + 800,000,000
3	1 + 75 + 6,261 + 167,000		1 + 26 + 1,000 + 621,000
4	900 + 75,000 + 51,000,000		900 + 1,000 + 411,000
5	8 + 700 + 8,000 + 255,000		8 + 993 + 8,000 + 111,000
6	Nine million		Four million four hundred and three
7	Five billion ,one hundred thousand		Seven billion ,100 thousand
8	9,539,541		7,329,875
9	7billion 457 million 474 thousand		2billion 499 million 899 thousand
10	145,642		1,150,689
11	478,246,000		100,100,000

Lesson (7) Ascending and descending numbers

ascending numbers

- We arrange the numbers from the smallest number to the largest number.

Descending numbers

- • We arrange the numbers from the largest number to the smallest number.

- **Note: The arrangement is from left to right**

Example 1: - Arrange in ascending order	
1	17,935,147 ، 33,325,749 ، 3,598,523 ، 9,581,596 ……………… ، ……………… ، ……………… ، ………………
2	48,160,000 ، 89,362,367 ، 673,258,267 ، 512,314,025 ……………… ، ……………… ، ……………… ، ………………
3	7,154,716 ، 100,456,000 ، 11,578,523 ، 9,278,444 ……………… ، ……………… ، ……………… ، ………………

Example 2: - Arrange in descending order	
1	12,935,147 ، 64,325,749 ، 5,243,266 ، 9,581,100 ……………… ، ……………… ، ……………… ، ………………
2	73,179,147 ، 73,325,145 ، 100,598,523 ، 256,000,596 ……………… ، ……………… ، ……………… ، ………………
3	1,541,555 ، 900,749 ، 10,174,728 ، 10,581,596 ……………… ، ……………… ، ……………… ، ………………

Example 3: - Complete as required

- **Note: Numbers must be placed in the standard form first and then arranged**

1	.... = 9 + 10 + 500 + 2,000 + 50,000 • .... = 2 + 60 + 700 + 8,000 + 70,000 • .... = 7 + 80 + 700 + 2,000 + 80,000 • .... = 2 + 50 + 700 + 4,000 + 90,000 • Descending order is .... , ... , ... , ...
2	.... = 70 + 700 + 9,000 + 30,000 + 60,000,000 • .... = 80 + 300 + 9,000 + 70,000 + 70,000,000 • .... = 50 + 400 + 4,000 + 10,000 + 90,000,000 • .... = 30 + 600 + 9,000 + 50,000 + 40,000,000 • Ascending order is .... , ... , ... , ...
3	..............= (5 × 1) + (7 × 10) + (3 × 100) + (2× 1,000) • ....= (9 × 1) + (5 × 10) + (2 × 100) + (3× 1,000) • ....= (2 × 1) + (3 × 10) + (7 × 100) + (9× 1,000) • ....= (7 × 1) + (2 × 10) + (5 × 100) + (2× 1,000) • Descending order is .... , ... , ... , ...
4	• Three hundred and sixty-three thousand five hundred and ninety-nine = ... = 958 + 363,000 • .... = 50,000 + 400 + (3 ×1000) • • Five billion and forty-one million =................. Ascending order is .... , ... , ... , ...

Exercises (5)

Example 1: - Arrange in ascending order	
1	935,147 ، 325,749 ، 598,523 ، 581,596 ……………… ، ……………… ، ……………… ، ………………
2	160,000 ، 362,367 ، 258,267 ، 314,025 ……………… ، ……………… ، ……………… ، ………………

Example 2: - Arrange in descending order	
1	935,147 ، 325,749 ، 243,266 ، 581,100 ……………… ، ……………… ، ……………… ، ………………
2	179,147 ، 325,145 ، 598,523 ، 256,596 ……………… ، ……………… ، ……………… ، ………………

Example 3: - Complete as required • Note: Numbers must be placed in the standard form first and then arranged	
1	• …………………………… = 8 + 10 + 400 + 3،000 + 40،000 • …………………………… = 6 + 60 + 700 + 7،000 + 80،000 • …………………………… = 5 + 80 + 700 + 4،000 + 60،000 • …………………………… = 1 + 40 + 700 + 3،000 + 40،000 Descending order is ……………… ، ……………… ، ……………… ، ………………
2	• ……………………… = Five billion one hundred thousand • ……………………… = 526 + 712,000 • ……………………… = 70,000 + 300 + (6 ×1000) • 541 million and 170 thousand = …………………………… Ascending order is ……………… ، ……………… ، ……………… ، ………………

Lesson (8)

Estimating
(predicting the unknown)

• First: Approximation using the midpoint strategy:

• **First: Approximation using the midpoint strategy:**

1- Determine the two numbers between which the number to be rounded lies:

The number 4,412 falls between 4,000 and 5,000

2- Determine the number in the middle of the space:

The number 4,500 is halfway between 4,000 and 5,000

3- Determine the location of the number to be rounded on the number line

4,500 < 4,412is below the midpoint

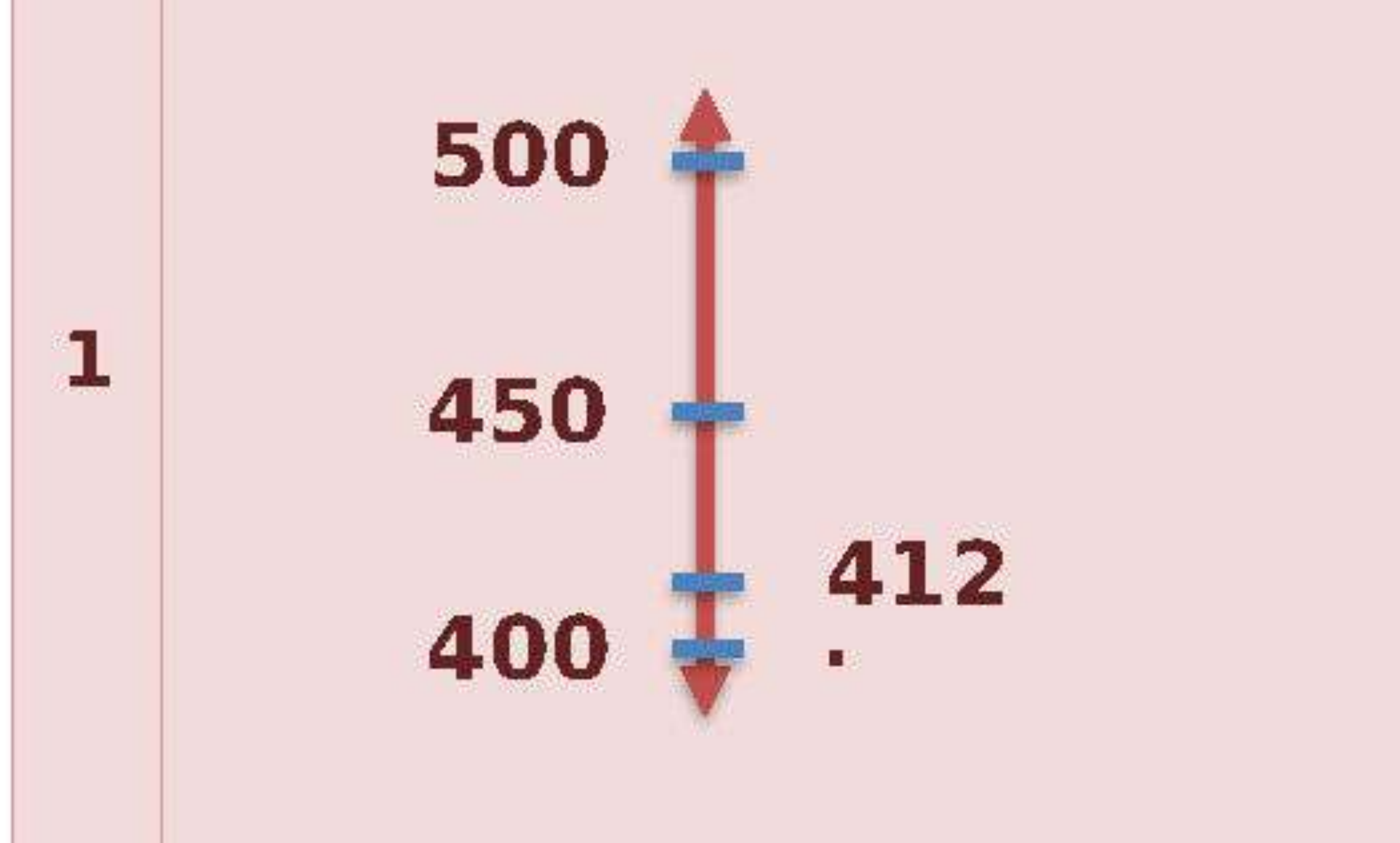
4- Determine the number closest to the number 4,412, so we find that it is closer to 4,000

And read: 4,412 equals approximately 4,000

Example (1): - Round using the midpoint strategy.

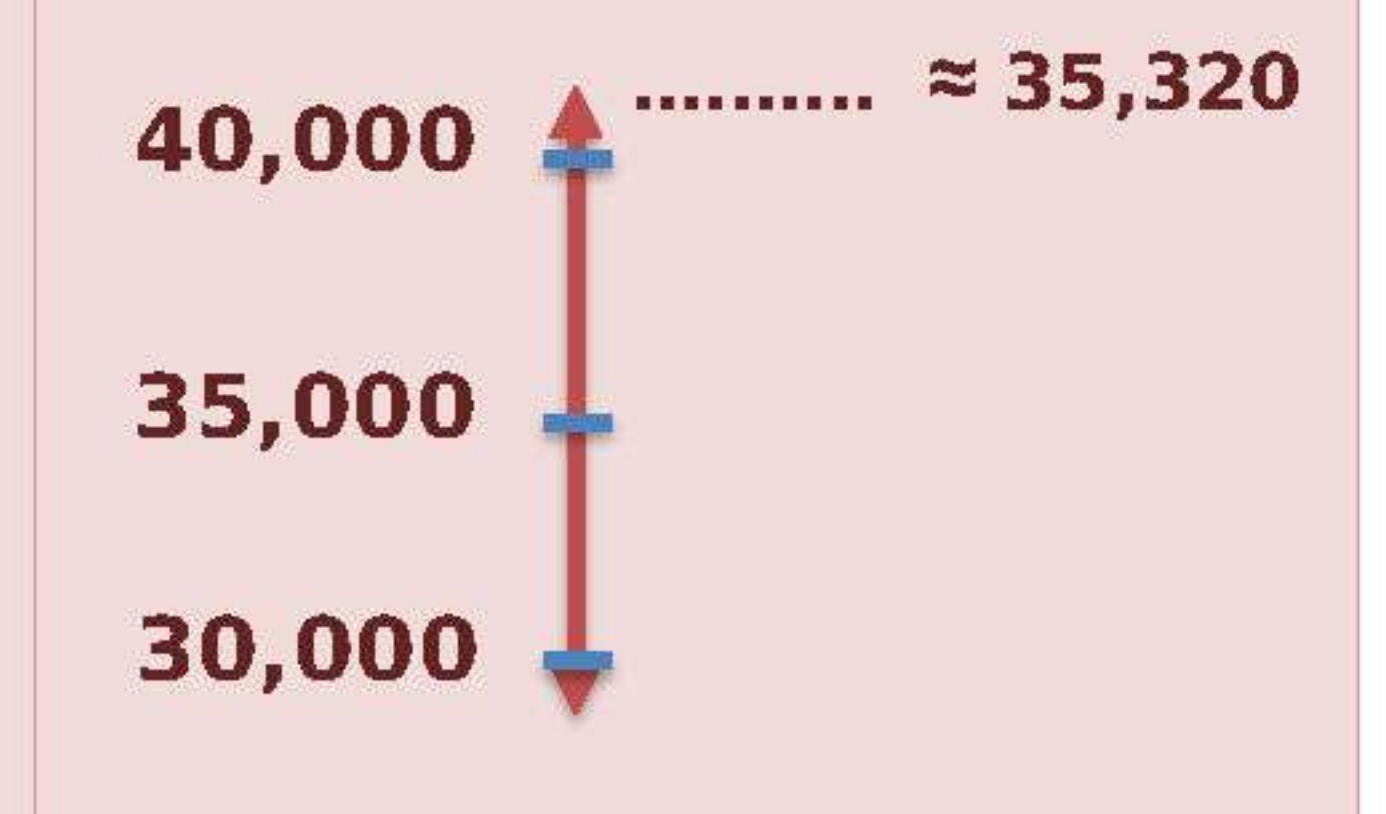
1

Round the number 412 to the nearest hundredth ≈ 400



3

Round the number 35,320 to the nearest ten thousand



2	Round the number 5,730 to the nearest thousand……	4	Round the number 7,500 to the nearest thousand…….
	6,000 / 5,500 / 5,000 ………… ≈ 5,730		8,000 / 7,500 / 7,000 ………. ≈ 7,500

• Second: - Rounding using the rounding rule:

- **Rounding rule**
  - We specify the number to the right of the field to be rounded, taking into account the following:
  - If the number (0, 1, 2, 3, 4) are stingy numbers, we do not add one, and the number goes down as it is.
  - If the number (5, 6, 7, 8, 9) are decent numbers, we add one to the number.
  - Put zeros in all fields before the field to be rounded.

Example (2)

	number	Rounding to the nearest	Rounding	estimate
(1)	123,345	ten	123,350	100,000
(2)	1,564,871	hundred		
(3)	15,868,423	thousand		
(4)	141,279,888	hundred thousand		
(5)	1,214,623,768	ten thousand		
(6)	19,531,040,011	million		
(7)	147,999,126,000	Ten million		

Example (1): - Rounding the following.

1	456,964,135 ≈ .... ten	3	543 ≈ .... hundred
2	258,253,100 ≈ .... thousand	4	5,256,777 ≈ ....hundred thousand

Example (3): - Round and estimate the following.

1	Round Estimate .... ← 284 → .... + + + ... ← 375 → .... الناتج الأقرب للناتج الفعلى هو	3	Round Estimate .... ← 347 → .... + + + ... ← 489 → .... الناتج الأقرب للناتج الفعلى هو ....
2	Round Estimate .... ← 130 → .... + + + ... ← 101 → .... The output closest to the actual output is.................	4	Round Estimate .... ← 270 → .... + + + ... ← 200 → .... The output closest to the actual output is.................

Example (4): Round the following to the nearest ten.

1	.... ≈ 852	3	.... ≈ 10,512
2	.... ≈2,306	4	..............≈ 128

Example (5): - Read and then answer

1	A building with a height of 125 meters, round the height of the building to the nearest hundred ....
2	A road with a length of 85,125 meters, round the length of the road to the nearest thousand ....
3	The population of the village is 42,146, round the population of the village to the nearest ten thousand ....

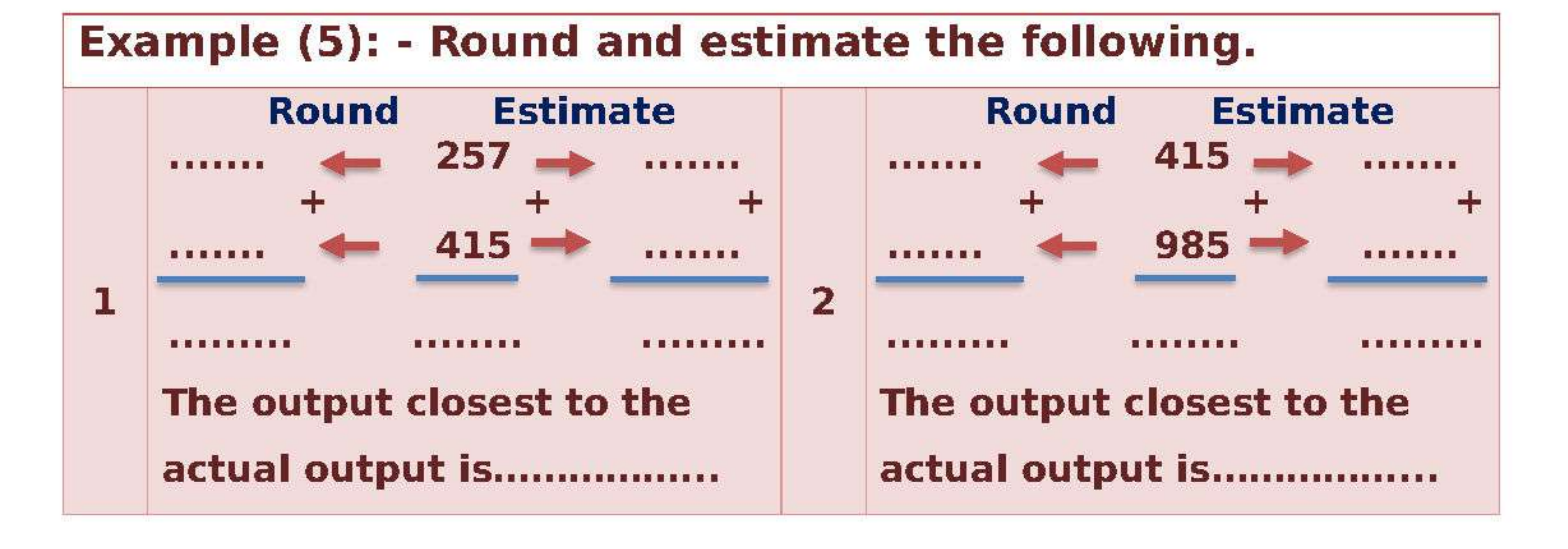
Exercises (6)

Example (1): Round the following to the nearest hundred.			
1	…………… ≈ 852	3	…………… ≈ 10,512
2	…………… ≈2,306	4	……………≈ 128

Example (2): Round the following to the nearest thousand.			
1	…………… ≈ 23,852	3	…………… ≈ 10,512
2	…………… ≈2,306	4	……………≈ 145,128

Example (3): Round the following to the nearest tens of thousands.			
1	…………… ≈ 160,256	3	…………… ≈ 623,512
2	…………… ≈537,306	4	……………≈ 728,128

Example (4): Round the following to the nearest million.			
1	…………… ≈ 72,747,852	3	…………… ≈ 12,975,512
2	…………… ≈2,306,246	4	……………≈ 145,128,467



Example (5): - Round and estimate the following.

1	Round Estimate ……. ← 257 → ……. + + + ……. ← 415 → ……. ……… ……. ……… The output closest to the actual output is………………	2	Round Estimate ……. ← 415 → ……. + + + ……. ← 985 → ……. ……… ……. ……… The output closest to the actual output is………………

Exam (unit one)

Example (1) Choose the correct answer							
(1)	The value of the digit 8 in the number 9,876,543 is						
(A)	80,000	(B)	800,000	(C)	8,000	(D)	8,000,000
(2)	A billion is the smallest number made up of .... digits						
(A)	10	(B)	11	(C)	9	(D)	7
(3)	The number of hundreds in the number 5,300,000 is						
(A)	53,000	(B)	5,300	(C)	530,000	(D)	530
(4)	12 represents............						
(A)	Digit	(B)	number	(C)	both together	(D)	otherwise
(5)	14million 960 thousand = ...						
(A)	140,960,000	(B)	1,400,960	(C)	14,960,000	(D)	140,960
(6)	10 × 4,500 = ...						
(A)	45,000	(B)	450,000	(C)	450	(D)	4,500,000
(7)	The value of the number 9 is in the millions........... The value of the number 3 is in the billion						
(A)	<	(B)	=	(C)	>	(D)	otherwise

Example (2): - Complete	
1	Seventy-five million three thousand and five written in standard form= ....
2	67thousand = ... hundred
3	A quarter of a million = ... thousand
4	253,100 ≈ .... to the nearest thousand
5	145,001written in the verbal form = ...
6	234,145,001is written in the analytical form = ...
7	The smallest 6-digit number is ....
8	(8 units and 1 hundreds) x 100= ....

Example (3) Choose the correct answer

(1)	Rounding the number 234,624 to the nearest ten thousand = …………						
(A)	234,000	(B)	230,000	(C)	240,000	(D)	234,600
(2)	10times the number 420 equals ………………						
(A)	42,000	(B)	42	(C)	420,000	(D)	4,200
(3)	The largest number that can be formed from the numbers 2, 4, 0, 8 is…………….						
(A)	2,048	(B)	8,420	(C)	8,402	(D)	2,480
(4)	………………………… = 12,000,000 + 56,000 + 100						
(A)	10,256,100	(B)	1,256,100	(C)	12,056,100	(D)	125,610
(5)	The place value of the digit 7 in the number 26,798 is ….						
(A)	units	(B)	Hundreds	(C)	tens	(D)	thousands
(6)	A pile of grains contains 424, how many grains are in 10 such piles? …………						
(A)	424,000	(B)	42,400	(C)	4,240	(D)	420,400
(7)	In the numerical form 33,455,436, what number has increased by 1,000 times in this numerical form? ……….						
(A)	5	(B)	4	(C)	3	(D)	6

Example (2): - Complete as required

1	How many times the value of a digit in the thousands place is equal to the value of a digit in the tens place (explained with an example) ……………………………………………………………
2	Factor the number 537,306 using the extended form. …………………………………………………………… ……………………………………………………………
3	Write 5 different values for the number 3 ………… ، ………… ، ………… ، ………… ، …………
4	Ascending order 581,100 , 243,266 , 325,749 , 935,147 ……………… ، ……………… ، ……………… ، ………………
5	Round the number 360 to the nearest hundred using midpoint strategy. …………………………………………………………… …………………………………………………………… …………………………………………………………… ……………………………………………………………

unit two lesson (1) — properties of addition

- **Identity Property of Addition (zero)**

- 685 + 0 = 0 + 685 = 685

- **Commutative property of addition**

- 375 + 225 = 225 + 375 = 600

- **Assuciatve property of addition**

- (215 + 65) + 300 = 215 + (65 + 300) =

- **Note that the Property (Commutative and Assuciatve) is not possible for the subtraction process.**

Example (1): - Complete.

Commutative		Assuciatve	Identity Property
(1)	12 + 14 = 14 + 12	12 + 14+7 = (12 + 14)+7=26+7=33	12 + 0 = 0 + 12 = 12
(2)	10 + 26 = 26 + ...	5 + 4 +8 = (5 +4)+8=9+8=17	0 + 26 = 26 +.....=26
(3)	9 + 4 = 4 + ...	15 + 10 +6 = (.... +10)+6=....+6=31	0 + 9 = 9 +......=.......
(4)	47+ 76 = ... + 47	35+15+20 = (.... +....)+....=...+...=....	47+ 0 = ... +47=.....
(5)	15 + 9 = ... + ...	27+13+4 = (.... +....)+....=...+...=....	15 + 0 = ... +....=.....
(6)	8 + 7 = ... + ...	17 +3+8 = (.... +....)+....=...+...=....	0 + 7 = ... +....=.....
(7)	38+ 70 = ... + ...	30+40+9 = (.... +....)+....=...+...=....	38+ 0 = ... +....=.....
(8)	a + b = ... + ...	7 +8+10 = (.... +....)+....=...+...=....	0 + b = ... + ...=.....
(9)	c + d = ... + ...	14 +6+5 = (.... +....)+....=...+...=....	14 + 0 =.....+ ....=.....

Exercises (1)

Example (1): - Complete.			
1	345 = 345 + 0 Property	3	The additive identity Property is........
2	5 + (56 +11) = 5 + 56 + 11 Property	4	423 + 635 =635 + 423 Property ....

Example (2): - Complete.			
1	215 + 0= .... Property	3	19 + ... = 19 Property ....
2	6 + 14 + 13 = (6+.....)+13 Property	4	23 + 67 = ... + 67 Property ....

Example 3: - Complete by writing equal or not equal.			
1	425 + 20		425 + 20
2	9 + 0		99 + 0
3	8 - 4		4 - 8
4	600 – (500+50)		(600 – 500) + 50
5	752 + (100 + 7)		(752 + 100) + 7

Example (4): - Complete.			
Commutative		Assuciatve	Identity Property
(1)	55 + 8 = ... + ...	32+12+6 = (.... +....)+....=....+....=....	31 + 0 = 0 + 31 = ...
(2)	43 + 98 = 98 + ...	4+3+9 = (.... +....)+....=....+....=....	0 + 13 = 13 +.....=13
(3)	8 + 3 = 3 + ...	11 + 6 +3 = (.... +6)+3=......+3=......	0 + 6 = 6 +......=......
(4)	31+ 54 = ... + 31	3+6+36 = (.... +....)+....=...+...=....	23+ 0 = ... +23=.....
(5)	11 + 2 = ... + ...	71+53+8 = (.... +....)+....=...+...=....	16 + 0 = ... +....=.....

Lesson (2, 3)

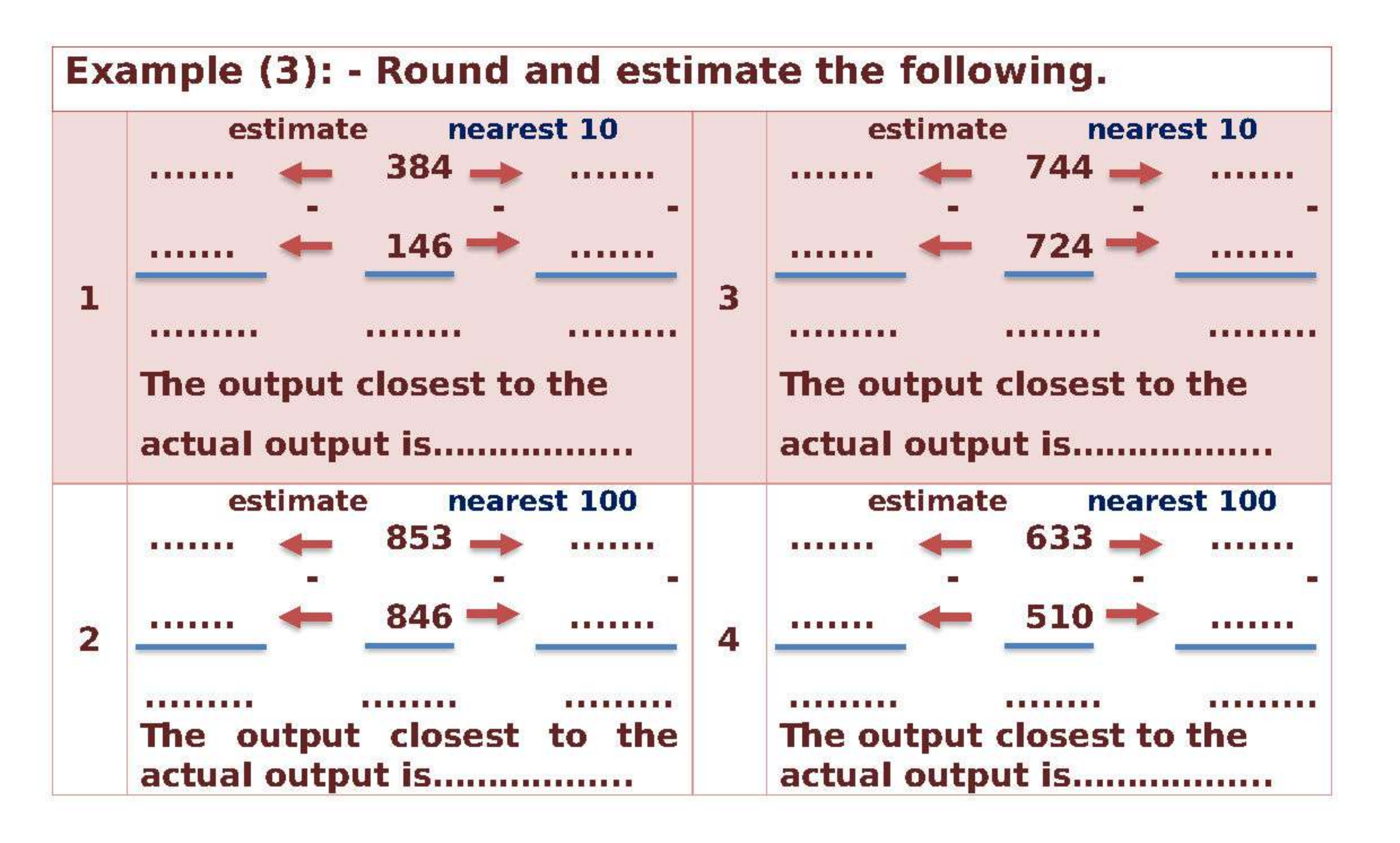
Addition and subtraction with Regrouping

Example (1) Find the product

1	284,153 + 375,938	7	484,156 + 775,935	1	484,153 - 375,938	7	884,156 - 775,935 ....
2	274,103 + 675,931	8	234,784 + 357,578	2	874,103 - 675,931	8	434,784 - 357,578 ....
3	583,173 + 175,627	9	582,158 + 255,734	3	583,173 - 175,627	9	582,158 - 255,734 ....
4	361,164 + 715,628	10	174,107 + 526,152	4	761,164 - 715,628	10	974,107 - 526,152 ....
5	623,153 + 974,353	11	528,624 + 153,780	5	923,153 - 574,353	11	528,624 - 153,780 ....
6	293,159 + 173,038	12	256,634 + 216,724	6	293,159 - 173,038	12	256,634 - 216,724 ....

Example (2): - Round and estimate the following.

1	estimate nearest 10 .... ← 384 → .... + + + ... ← 146 → .... The output closest to the actual output is.................	3	estimate nearest 10 .... ← 744 → .... + + + ... ← 724 → .... The output closest to the actual output is.................
2	estimate nearest 100 .... ← 526 → .... + + + ... ← 846 → .... The output closest to the actual output is.................	4	estimate nearest 100 .... ← 633 → .... + + + ... ← 510 → .... The output closest to the actual output is.................



Example (3): - Round and estimate the following.

1	estimate nearest 10 .... ← 384 → .... - - - .... ← 146 → .... The output closest to the actual output is.................	3	estimate nearest 10 .... ← 744 → .... - - - .... ← 724 → .... The output closest to the actual output is.................
2	estimate nearest 100 .... ← 853 → .... - - - .... ← 846 → .... The output closest to the actual output is.................	4	estimate nearest 100 .... ← 633 → .... - - - .... ← 510 → .... The output closest to the actual output is.................

Example (4): - Find the product.			
1	836,246 + 357,427=	5	757,573 + 934,785 = ...
2	287,468 +924,744=	6	200,577 + 263,157= ....
3	836,246 - 357,427=	7	957,573 - 634,785 = ...
4	987,468 - 924,744=	8	500,577 - 263,157= ....

Example (5): - Read and then answer	
1	Souad planted a number of trees, so if she planted 45 trees on the first day and in The second day 43 trees. Find what was grown in the two days The exact answer =............... + ... = ... Rounding to the nearest ten = ... +........... = ...
2	Said saved an amount of money 5,293 pounds, and Fayrouz saved an amount of money 4,426 pounds Find the sum of what they both have The exact answer =............... + ... = ... Rounding to the nearest thousand= .... +.......... = ...
3	Ali bought 15 games and his sister Fatima bought 13 games Find the difference between what is with them The exact answer =............... + ... = ... Rounding to the nearest ten = ... +........... = ...

Exercises (2)

Example (1) Find the product

1	284,153 + 375,938 ……………	7	484,156 + 775,935 ……………	1	484,153 - 375,938 ……………	7	884,156 - 775,935 ……………
2	274,103 + 675,931 ……………	8	234,784 + 357,578 ……………	2	874,103 - 675,931 ……………	8	434,784 - 357,578 ……………
3	583,173 + 175,627 ……………	9	582,158 + 255,734 ……………	3	583,173 - 175,627 ……………	9	582,158 - 255,734 ……………

Example (2): - Round and estimate the following.

1	estimate nearest 10 ……. ← 632 → ……. + + + ……. ← 724 → ……. ……… ……. ……… The output closest to the actual output is………………	3	estimate nearest 10 ……. ← 578 → ……. - - - ……. ← 379 → ……. ……… ……. ……… The output closest to the actual output is………………
2	estimate nearest 100 ……. ← 413 → ……. + + + ……. ← 742 → ……. ……… ……. ……… The output closest to the actual output is………………	4	estimate nearest 100 ……. ← 267 → ……. - - - ……. ← 153 → ……. ……… ……. ……… The output closest to the actual output is………………

Example (3): - Find the product.			
1	256,566 + 874,349=	3	624,432 + 156,100= ....
2	157,246 - 122,643=	4	267,573 - 134,785 = ...

Example (4): - Read and then answer	
1	A bridge of ants consists of 142 ants, and another bridge consists of 165 ants. How many ants are there in the two fractions together? (round to the nearest ten) The exact answer =................ + ... = ... Rounding to the nearest ten = ... +........... = ...
2	The state provided vaccination against the Corona virus, so 1,653,465 people were vaccinated in the first stage, and 3,312,447 people were vaccinated in the second stage. The exact answer =................ + ... = ... Rounding to the nearest million = ... +........... = ...
3	A bakery sold 1,232 dumplings in one day. If it sold 867 dumplings in the morning, how many dumplings were sold during the rest of the day? (round to the nearest hundred) The exact answer =................ + ... = ... Rounding to the nearest hundred= .... +......... = ...
4	There are 20,000 ants in the colony, of which 1,200 are females and the rest are males. Find the number of males. (rounded to the nearest thousand) The exact answer =................ + ... = ... Rounding to the nearest thousand = ... +........ = ...

Lesson (4, 5)

- Bar models, variables and story problems
- Solving multi-step story problems with addition and subtraction Number

Bar models •

- •It is used to represent story problems and solve them. The corresponding form represents the bar form
- **Equation:** It is an equal relationship between two parties.
- **Variable:** It is a symbol used to save the digit of the missing (unknown) number.

Example: Using the bar form, find the value of the unknown symbol in each of the following:

1

all	
part	part

- If you need all addition
- If you need a part Subtraction

2

56,874 + a = 104,309

96,518	
x	53,924

x = 96,518 - 53,924
x = 42,594

- Note: Addition becomes subtraction

3

b - 615,283 = 99,714

b	
615,283	99,714

b = 615,283 + 99,714
b = 714,997

- Note: Subtraction becomes addition

4

356,128 - c =115,604

356,128	
c	115,604

c = 356,128 - 115,604
c = 240,524

- Note: minus symbol It stays minus

Example: Using the bar form, find the value of the unknown symbol in each of the following:

1 y - 515,274 = 60,276

2 66,828 + k = 184,294

Example (1) Using the bar form, find, as required, in each of the following:

<table>
<tr><td>1</td><td>Iman planted a number of trees, so if she planted 31 trees on the first day and 25 trees on the second day. create
The sum of what you sow in the two days=........
....</td><td>2</td><td>Said saved an amount of money 65,203 pounds, and Fayrouz saved an amount of money 47,429 pounds
Find the difference between what was saved=........
....</td></tr>
<tr><td>3</td><td>The school wants to have its own ant colony for observation and study. The colony will contain 135,523 ants. If Louay brings 53,523 ants, and Aisha brings 55,530 ants, how many additional ants will the colony need?
The number of what Loua and Aisha brought=
....
What the colony will need from ants=
....</td><td>4</td><td>The school wants to have its own ant colony for observation and study. The colony will contain 95,523 ants. If Louay brings 53,523 ants, and Aisha brings 55,530 ants, how many ants are there in excess of our need?
The number of what Loua and Aisha brought=
....
How much is the increase in ants=
....</td></tr>
</table>

Example (2) Find the value of the symbol in the following equations:

1	710 + g = 930 g = ...	5	6,256 + a = 8,526 a = ...
2	a – 4,012 = 9,103 a = ...	6	x + 52,145 = 73,513 x = ...
3	812 - g = 415 g = ...	7	932+ a = 1,456 a = ...
4	a – 6,422 = 4,252 a = ...	8	x + 25,145 = 43,432 x = ...

Example (3): - Complete

1	Bassem bought a bedroom for 12,152 pounds, and a refrigerator for 8,252 pounds. 25,522 pounds if he is with Bassem. What's left with him The price of the bedroom and refrigerator = ... + ... = ... pounds The remainder with Bassem = ... + ... = ... pounds
2	The population of the city of Mansoura is 552,641 people, while the population of The city of Mahalla, 452,252 people. Find the total population of the two cities and the difference between them. The sum of the two cities= .... + ...=............. The difference between the two cities = ... + ...=.............

Exercises (3)

Example(1): Using the bar form, find the value of the unknown symbol in each of the following:

1	H - 314,153 = 15,415	2	41,153 + R = 51,157

Example (2) Find the value of the symbol in the following equations:

1	415 + E = 714 g = ...	5	7,612 + a = 9,417 a = ...
2	a – 5,145 = 9,578 a = ...	6	x + 43,266 = 62,267 x = ...

Example (3): - Complete

1	He bought a bedroom for 20,153 pounds, and a refrigerator for 5,267 pounds. 32,515 pounds if he is with Bassem. What's left with him . ...
2	The population of the city of Mansoura is 423,416 people, while the population of The city of Mahalla, 621,124 people. Find the total population of the two cities and the difference between them. ....

Exam (Unit Two)

Example (1) Choose the correct answer

(1)	Estimating the number 34,089 to the nearest ten thousand=...						
(أ)	34,000	(ب)	34,090	(جـ)	30,000	(د)	35,000
(2)	Four hundred twenty-three thousand, and two .... 2 + 30,000 + 400,000						
(أ)	<	(ب)	=	(جـ)	>	(د)	otherwise
(3)	.... = T ، 279 - T = 266						
(أ)	3	(ب)	13	(جـ)	33	(د)	530
(4)	Which of the following equations satisfies the additive neutrality in addition?						
(أ)	9+0=9	(ب)	8+3=3+8	(جـ)	5×1=5	(د)	3+4=5+2
(5)	47,605 + 63,395 = ...						
(أ)	140,960,000	(ب)	1,400,960	(جـ)	111,00	(د)	140,960
(6)	Which of the following questions indicates the commutative property of the plural?						
(أ)	= 492 + 635 635 + 492	(ب)	0 + 847= 847	(جـ)	= 36 16 + (2+ 18)	(د)	7,012
(7)	The additive neutral element is.......................						
(أ)	0	(ب)	1	(جـ)	2	(د)	3

<table>
<tr><th colspan="2">Example (2): - Complete</th></tr>
<tr><td>1</td><td>................. = A ، A – 400 = 800</td></tr>
<tr><td>2</td><td>Additive neutral element plus 99 = ...</td></tr>
<tr><td>3</td><td>X = ...<table><tr><td colspan="2">96,518</td></tr><tr><td>53,924</td><td>x</td></tr></table></td></tr>
<tr><td>4</td><td>57,000 – 43,875 = ...</td></tr>
<tr><td>5</td><td>854 + ... =854and it is called the property of.............</td></tr>
<tr><td>6</td><td>234,145,001is written in the analytical form =..................
....
....</td></tr>
<tr><td>7</td><td>The smallest 7-digit number is.........................</td></tr>
<tr><td>8</td><td>63 + ... = 765 + 63</td></tr>
</table>

Example (3) Choose the correct answer

(1)	The property 17 + 74 = 74 + 17 is called the property of..........						
(أ)	Associate property of addition	(ب)	Commutative property of addition	(جـ)	Identity Property of addition	(د)	Identity Property of multiplication
(2)	1 + 853 .... 894 – 754						
(أ)	<	(ب)	=	(جـ)	>	(د)	otherwise
(3)	Muhammad saved 749 pounds and spent 436 pounds of it, how much is left..........						
(أ)	624	(ب)	421	(جـ)	552	(د)	313
(4)	Is 5 - 8 = 8 - 5 a correct math sentence........... ?						
(أ)	Yes, because the Commutative is realized in the subtraction	(ب)	No, because the Commutative is not realized in the subtraction	(جـ)	No, because the Associate is not realized in the subtraction	(د)	Yes, because the Associate is realized in the subtraction
(5)	The closest result to solving the problem is 5,734 + 182,766						
(أ)	170,000	(ب)	175,000	(جـ)	180,000	(د)	189,000
(6)	A pile of grains contains 424, how many grains are in 100 such piles.......... ?						
(أ)	424,000	(ب)	42,400	(جـ)	4,240	(د)	420,400
(7)	If 425 = 260 + R then R =......................						
(أ)	165	(ب)	241	(جـ)	153	(د)	215

Example (2): - Complete as required

1	Find the product using the properties of addition 46 + 53 + 56 +47 = ...
2	738,382 – 415,635 =..
3	326,820 + 278,168 =..
4	Ahmed covered 25 km with his car and 156 km again. How many km did he cover? ....
5	With Eman 2,738 pounds, she bought a gift for her brother with 1,884 pounds, and she bought a bag with 241 pounds, how much is left with her? ....

The third unit
Lesson (1)

Measure lengths

• The relationship between units of length:

- 1kilometer = 1,000 meters. 1 meter = 10 decimeters.
- 1decimeter =10 centimeters. 1 meter = 100 centimeters.
- 1decimeter = 100 millimeters. 1 meter = 10 millimeters.

note

- Kilometer: used to measure very long distances, such as: - The length of the Nile River
- Meter: used to measure long objects such as: - The height of a building
- The decimeter: used to measure relatively long objects such as: - The height of a door
- Centimeters: used to measure short objects such as: - The length of a book
- Millimeter: It is used to measure very short things, such as: - The length of an ant

Example (1): Choose the appropriate unit to measure the length of each of the following:

(1)	child's height.................						
(A)	kilometer	(B)	meter	(C)	centimeter	(D)	millimeter
(2)	palm length.................						
(A)	kilometer	(B)	meter	(C)	centimeter	(D)	millimeter
(3)	The length of a road between two cities..................						
(A)	kilometer	(B)	meter	(C)	centimeter	(D)	millimeter
(4)	Mobile length.................						
(A)	kilometer	(B)	meter	(C)	centimeter	(D)	millimeter
(5)	The length of the house....................						
(A)	kilometer	(B)	meter	(C)	centimeter	(D)	millimeter

• The relationship between units of length:

- When converting from a large unit to a small unit, we multiply
- Ex: 6 kilometers= .... meters. The solution is 6x1,000=6,000
- When converting from a small unit to a large unit, we divide
- Ex: 7,000 cm = ... meters Solution 70 = 100 ÷ 7,000
- A quarter of a kilometer = 250 metres
- Half a kilometer = 500 metres
- Three quarters of a kilometer = 750 metres

Example (2) Complete

1	1 km = ... metres	8	4 km = ... metres
2	26 m = ... cm	9	3 m = ... cm
3	460 cm = ... mm	10	20 cm = ... mm
4	85 km = ... meters	11	611 km = ... meters
5	56 m =...........decimeters	12	7 m =...........decimeters
6	814 m = ... cm	13	6 m = ... cm
7	12 cm = ... mm	14	90 cm = ... mm

Example (3) Using the bar form, complete each of the following:

	km	m
1	12	....
2	4	....
3	....	5,000
4	....	43,000

	m	cm
5	10	....
6	86	....
7	....	2,000
8	....	100

	cm	mm
9	52	....
10	75	....
11	....	60
12	....	570

Example (4): - Complete as required	
1	Arranged ascending two meters , 400 cm , 150 dm ... . ,................ ,................
2	Descending order: 3km , 1,500m , 25,000 dm ... . ,................ ,................

Example (5): - Complete	
1	5meters, 45 cm = 500 cm + 45 cm = 545 cm
2	4meters, 62 cm = ... = ... cm
3	6meters, 41 cm = ... = ... poison
4	530cm = ... meters, ... cm
5	34,150meters = ... km, ... meters
6	315decimals = ... metres, ... decimals

Example (6): - Compare using (= , < , >)			
1	4metres		350cm
2	2,500cm		250dm
3	120dm		300metres
4	2km		3,500metres
5	1,400metres		670dm

Example (7): - Complete as required	
1	An ant walked a distance of 4 meters without stopping in one hour, so how many hours can it walk to cover a distance of 1 kilometer, and how much distance would it travel if it walked for 5 hours? ....
2	A man found an ant house at a depth of 8 meters. Find its depth in centimeters. ....
3	An ant walked a distance of 500 metres, how many hours does it take it to travel 2 km? ....

Exercises (1)

Example (1): Choose the appropriate unit to measure the length of each of the following:							
(1)	The length of a cup of water						
(A)	kilometer	(B)	meter	(C)	centimeter	(D)	millimeter
(2)	human height						
(A)	kilometer	(B)	meter	(C)	centimeter	(D)	millimeter
(3)	The length of a road between Cairo and Alexandria						
(A)	kilometer	(B)	meter	(C)	centimeter	(D)	millimeter

Example (2) Complete			
1	7 km = ... metres	4	8 km = ... metres
2	12 m = ... cm	5	2 m = ... cm
3	510 cm = ... mm	6	41 cm = ... mm

Example (3): - Complete as required	
1	Ascending order 5m , 300cm , 210dm ... . ,................. ,.................

Example (4): - Complete	
1	3meters, 13 cm = ... =.............. cm
2	4km, 62 meters = ... =........... meter
3	8dm, 51 cm = ... =.............. cm

Example (7): - Complete as required	
3	An ant walked a distance of 500 metres, how many hours does it take it to travel a distance of 3 km? ....

The third unit
Lesson (2)

Measure mass

• The relationship between mass units:

- 1ton = 1,000 kg, kilogram = 1,000 grams
- **Ton:** to measure very large masses,
  such as: - The mass of a submarine
- **Kilogram:** to measure relatively heavy masses
  such as: - human mass
- **The gram:** for measuring very light masses
  such as: - the mass of a ring

Example (1): Choose the appropriate unit to measure the mass of:							
(1)	The mass of child						
(A)	Kg	(B)	gram	(c)	Ton	(D)	otherwise
(2)	The mass of elephant......................						
(A)	Kg	(B)	gram	(c)	Ton	(D)	otherwise
(3)	The mass of Mobile......................						
(A)	Kg	(B)	gram	(c)	Ton	(D)	otherwise
(4)	The mass of Cup water......................						
(A)	Kg	(B)	gram	(c)	Ton	(D)	otherwise

• The relationship between mass units:

- When converting from a large unit to a small unit, we multiply

Ex: 6 kilograms = ... g Solution 6 x 1,000 = 6,000

- When converting from a small unit to a large unit, we divide
- Ex: 7,000 g = ... kg of solution 7 = 1,000 ÷ 7,000
- A quarter of a kilogram = 250 grams
- Half a kilogram = 500 grams
- Three quarters of a kilogram = 750 grams

Example (2) Complete

1	1kg = ... g	6	22 tons = ... kg
2	3 tons = ... kg	7	130,000kg = ... tons
3	2,000kg = ... tons	8	75,000gm = ... kg
4	6,000gm = ... kg	9	91 tons = ... kg
5	14 kg = ... g	10	12,000kg = ... tons

Example (3) Using the bar form, complete each of the following

	kg	gm
1	5	....
2	23	....
3	....	5,000
4	....	43,000

	kg	gm
5	10	....
6	64	....
7	....	8,000
8	....	11,000

	kg	gm
9	52	....
10	75	....
11	....	20,000
12	....	79,000

Example (4): - Complete as required

1	5kg , 7,300gm , 2,000 gm ... . ,................ ,................	in ascending order
2	1,500 kg , 500 g , 2 tons ... . ,................ ,................	In descending order

Example (5): - About what comes as an example

1	5kg, 45 g = 5,000 g + 45 g = 5,045 g
2	4kg, 62 g = ... = ... g
3	6tons, 41 kg = ... = ... kg
4	34,000g = ... kg, ... g
5	7,253g = ...kg, ... g
6	543,831g = ... kg, ... g

Example (6): - Compare using (= , < , >)			
1	4kg		350g
2	2,500kg		250tons
3	120kg		300g
4	2tons		3,500gm

Example (7): - Complete as required	
1	Rouaa and Eman took a sample from ant colonies, their weight was 26 kg, 200 g Write these weights in grams. ....
2	If Farid's mass is 80 kg, and Iman's mass is 67,250 g. Find the sum of their masses. The sum of their masses = ... kg, ... g

• **Example (8) Complete the bar forms**





8,621 kg (7)	21,731 kg (8)	5,612 kg (9)
...tons,....kg	...tons,....kg	...tons,....kg

Exercises (2)

Example (1): Choose the appropriate unit to measure the mass of:							
(1)	The mass of wheel						
(A)	Kg	(B)	gram	(c)	Ton	(D)	otherwise
(2)	The mass of a nail						
(A)	Kg	(B)	gram	(c)	Ton	(D)	otherwise
(3)	The mass of laptop						
(A)	Kg	(B)	gram	(c)	Ton	(D)	otherwise
(4)	The mass of refrigerator						
(A)	Kg	(B)	gram	(c)	Ton	(D)	otherwise

Example (2) Complete			
1	12kg = ... gm	6	52 tons = ... kg
2	43 tons = ... kg	7	................kg = 24 tons
3	26,000kg = ... tons	8	48,000gm = ... kg
4	9,000gm = ... kg	9	92 tons = ... kg
5	...........kg = 13,000 gm	10	................kg = 10 tons

Example (3) Using the bar form, complete each of the following:

	kg	gm
1	3	....
2	73	....
3	....	98,000
4	....	3,000

	kg	gm
5	13	....
6	41	....
7	....	64,000
8	....	51,000

	kg	gm
9	71	....
10	49	....
11	....	50,000
12	....	92,000

Example (4): - Complete as required	
1	4kg, 5,600gm, 3,000gm in ascending order ... . ,................ ,................
2	3,700 kg, 90,000 g, 4 tons In descending order ... . ,................ ,................

Example (5): - Complete	
1	43tons, 515 kg = ... = ... kg
2	61kg, 522 gm = ... = ... gm
3	51tons, 982 kg = ... = ... kg
4	61,000gm = ... kg, ... gm
5	81,525gm = ... kg, ... gm
6	723,748gm = ... kg, ... gm

Example (6): - Compare using (= , < , >)			
1	4kg and 100 grams		35,000gm
2	22,500kg		2tons and 300 km
3	2kg and 430 gm		4,200gm
4	2tons		3,500gm

Example (7): - Complete as required	
1	Malak and Rawda took a sample from ant colonies, their weight was 13 kg, 250 gm Write these weights in grams. ....
2	If Muhammad's mass is 30 kg, and Hana's mass is 35,250 g. Find the sum of their masses. The sum of their masses = ... kg, ... gm

The third unit
Lesson (3)

capacity

• The relationship between capacitance units:

- 1 liter = 1,000 milliliters
- Capacity: the amount of liquid that something contains
- Liter: to measure the capacity of large containers
  such as: - Water bottle
- Milliliters: to measure the capacity of small containers
  such as: a medicine container

Example (1): Choose the appropriate unit to measure the capacity of each of the following:

(1)	Small juice box capacity................................		
(A)	liter	(B)	milliliter
(2)	Medicine box capacity..................		
(A)	liter	(B)	milliliter
(3)	Water heater capacity.................		
(A)	liter	(B)	milliliter
(4)	Water cup capacity..................		
(A)	liter	(B)	milliliter
(5)	Water tank capacity.................		
(A)	liter	(B)	milliliter

• The relationship between capacitance units:

• When converting from a large unit to a small unit, we multiply

- Ex: 6 liters = ... milliliters Solution 6 x 1,000 = 6,000

• When converting from a small unit to a large unit, we divide

Ex: 7,000 milliliters = ... liters of solution 7 = 1,000 ÷ 7,000

- A quarter of a liter = 250 milliliters
- Half a liter = 500 milliliters
- Three quarters of a liter = 750 milliliters

Example (2) Complete

1	6liters = ……….. milliliters	6	42 liters = ……….. milliliters
2	13 liters = ……… milliliters	7	41,000milliliters = ….. liters
3	31,000milliliters =…. liters	8	72,000milliliters = …… liters
4	4,000milliliters = ….. liters	9	53 liters = ……….. milliliters
5	83 liters = ……… milliliters	10	62,000milliliters = …… liters

Example (3) Using the bar form, complete each of the following:

	Liter	milliliters
1	52	……….
2	75	……….
3	……..	40,000
4	……..	25,000

	Liter	milliliters
1	36	……….
2	72	……….
3	……..	9,000
4	……..	64,000

	Liter	milliliters
1	42	……….
2	26	……….
3	……..	9,000
4	……..	64,000

Example (4): - Complete as required

1	Ascending order: 5 liters, 5,300 milliliters, 2,000 milliliters …………………. ,…………………. ,………………
2	In descending order 3,500 liters, 700 milliliters, 4 liters ………………. ,…………………… ,…………………

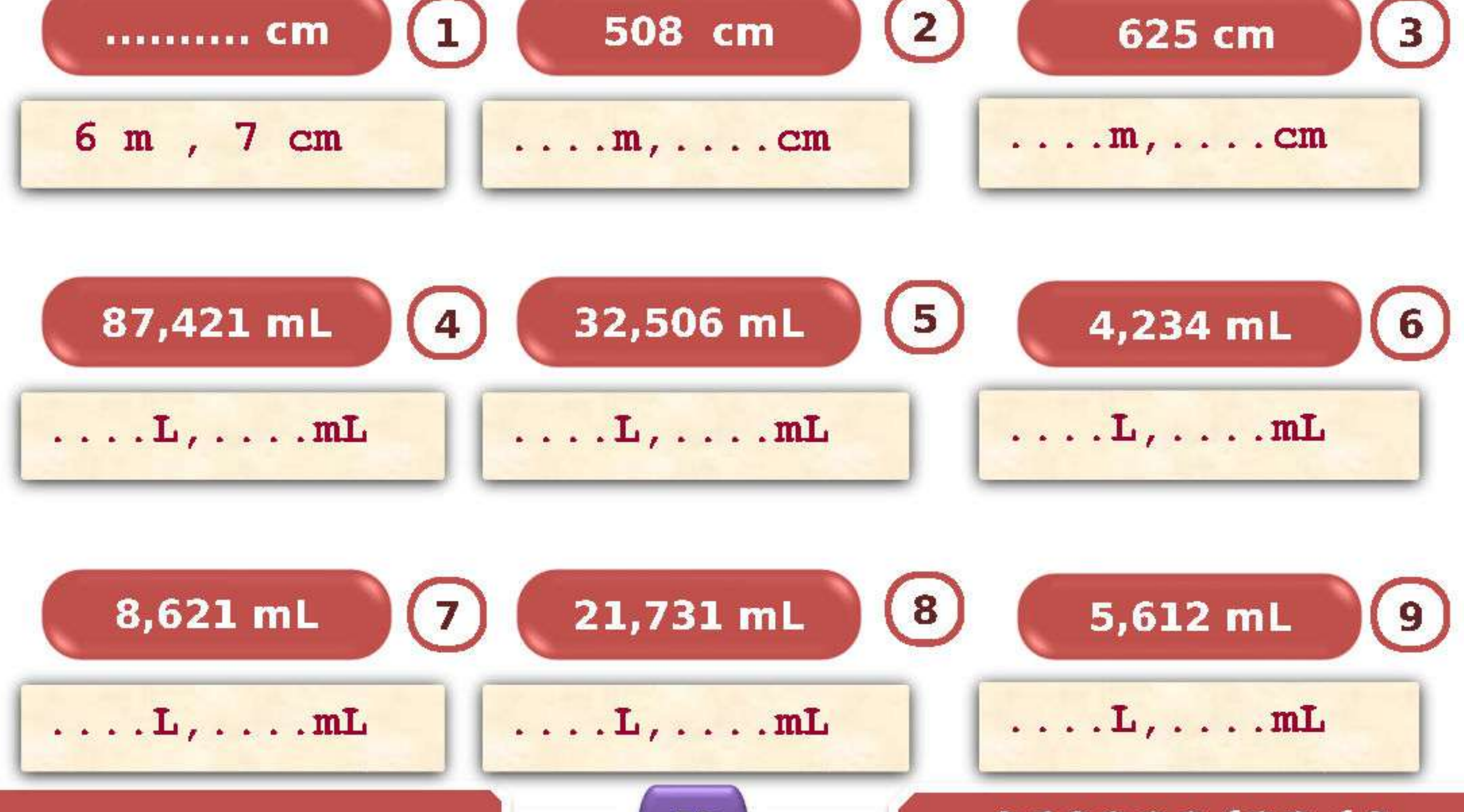
Example (5): - About what comes as an example

1	5liters, 45 milliliters = 5,000 milliliters + 45 milliliters = = 5,045 milliliters
2	3liters, 51 milliliters = ……………………. = ……….Milliliters
3	7liters, 451 milliliters = ……………………. =……. milliliters
4	62,000milliliters = ……………. liters, ……….. milliliters
5	8,134milliliters = ……………. liters, ……….. milliliters
6	415,132milliliters = ……………. liters, ……….. milliliters

Example (6): - Compare using(= , < , >)			
1	2liters and 700 milliliters		3,500milliliters
2	2,500liters		2liters and 300 milliliters
3	4liters and 200 milliliters		4,200milliliters
4	4liters		4,300milliliters

Example (7): - Complete as required	
1	A family drank 1 liter and 400 ml of orange juice at breakfast. If there were 4 liters of juice, find the remainder of the juice. …………………………………………………………………………
2	The fuel tank is full of 30 liters and 300 ml of petrol remains at the end of the day 20 liters and 130 ml Find the amount that was used. …………………………………………………………………………
3	The car is filled with 250 liters of petrol. Find the number of milliliters used. …………………………………………………………………………

- Example (8) Complete the bar forms



Exercises (3)

Example (1): Choose the appropriate unit to measure the capacity of each of the following:			
(1)	Soda bottle capacity................................		
(A)	liter	(B)	milliliter
(2)	Juice cup capacity................................		
(A)	liter	(B)	milliliter
(3)	fuel tank capacity.................		
(A)	liter	(B)	milliliter

Example (2) Complete			
1	24 L = ... mL	3	10,000mL = ... L
2	62 L = ... mL	4	89,000 mL = ... L

Example (4): - Complete as required	
1	Ascending order 4 liters, 2,300 milliliters, 1,000 milliliters .... ,....................... ,..................

Example (5): - Complete	
1	7 liters, 4 milliliters = ... = ... L
2	62,214 milliliters = ... liters, ... milliliters

Example (7): - Complete as required	
1	The car is filled with 43 liters of petrol. Find the number of milliliters used. ....
2	The fuel tank is full of 25 liters and 400 ml of petrol remains at the end of the day 15 liters and 200 ml Find the amount that was used . ...

The third unit
Lesson (4)

What's the time?
(units of time)

- **The relationship between units of measurement of time:**

- 1 week = 7 days , 1 day = 24 hours
- An hour = 60 minutes , a minute = 60 seconds
- An hour = 3,600 seconds , a day = 1,440 minutes
- Half an hour = 30 minutes , a third of an hour = 20 minutes
- A quarter of an hour = 15 minutes
- three quarters of an hour = 45 minutes

- **Example (1) What time is it in each of the following?**







Example (2) Complete

1	A week and 5 days =................ days	6	Two hours and 15 min =..................... min
2	4 days and 7 hours =...................... hours	7	1hour and 20 seconds = ... seconds
3	96 hours .... = days	8	28days = ... week
4	8hours = ... min	9	72hours = ... days
5	7 min = ... sec	10	600 min = ... hour

Example (3) Using the bar form, complete each of the following:

	min	sec
1	1	....
2	2	....
3	....	180
4	....	240

	days	hours
5	1	....
6	2	....
7	....	72
8	....	96

	week	days
9	1	....
10	3	....
11	....	35
12	....	70

Example (4): - Complete as required	
1	5weeks , 51 days , 72 hours , in ascending order ……………… ,…………………… ,……………………
2	2 weeks , 13 days , 96 hours Descending order ………………… ,…………………… ,……………………

Example (5): - About what comes as an example	
1	9hours, 15 minutes = (9×60) + 15 = 540 + 15 = 565 min
2	5hours, 20 minutes = …………………………………… minute
3	5minutes, 18 seconds = ……………………………………second
4	5weeks, 3 days = …………………………………… …………day
5	6weeks, 14 days = ……………………………………………week
6	24days = ……………… a week, ……….. a day

Example (6): - Compare using (= , < , >)			
1	11days		two weeks
2	124minutes		An hour and a half
3	93seconds		two minutes
4	day, two hours		26hours

Example (7): - Complete as required	
1	Ahmed spent 15 minutes on the field, how long did it take in seconds? ……………………………………………………………………
2	The lesson lasted 30 minutes. How many hours did the class last? ……………………………………………………………………
3	Sarah went to the summer resort for 5 days and 15 hours. How much is the time in hours? ……………………………………………………………………

Exercises (4)

Example (1) Complete			
1	3weeks and 3 days =...................... days	4	180 min = ... hours
2	3 days and 9 hours =...................... hour	5	12 min = ... sec
3	48hours = ... days	9	21days = ...week

Example (2): - Complete as required	
1	4weeks, 32 days, 96 hours, in ascending order ... . ,................ ,................
2	3 weeks , 29 days , 28 hours Descending order .... ,.................... ,................

Example (5): - About what comes as an example	
1	3days, 20 hours = ... hours
2	5hours, 20 minutes = ... minute
3	3minutes, 20 seconds = ...second
4	30days = ... a week, ... a day

Example (6): - Compare using (= , < , >)			
1	11days		two weeks
2	124minutes		An hour and a half

Example (7): - Complete as required	
1	Ahmed spent 20 minutes on the field, how long did it take in seconds? ....
2	Ruqaya went to the summer resort for 3 days and 20 hours. How much is the time in hours? ....

The third unit
Lesson (5)

How much time does it take? (Elapsed time)

• Number line strategy:

• Use the number line by addition

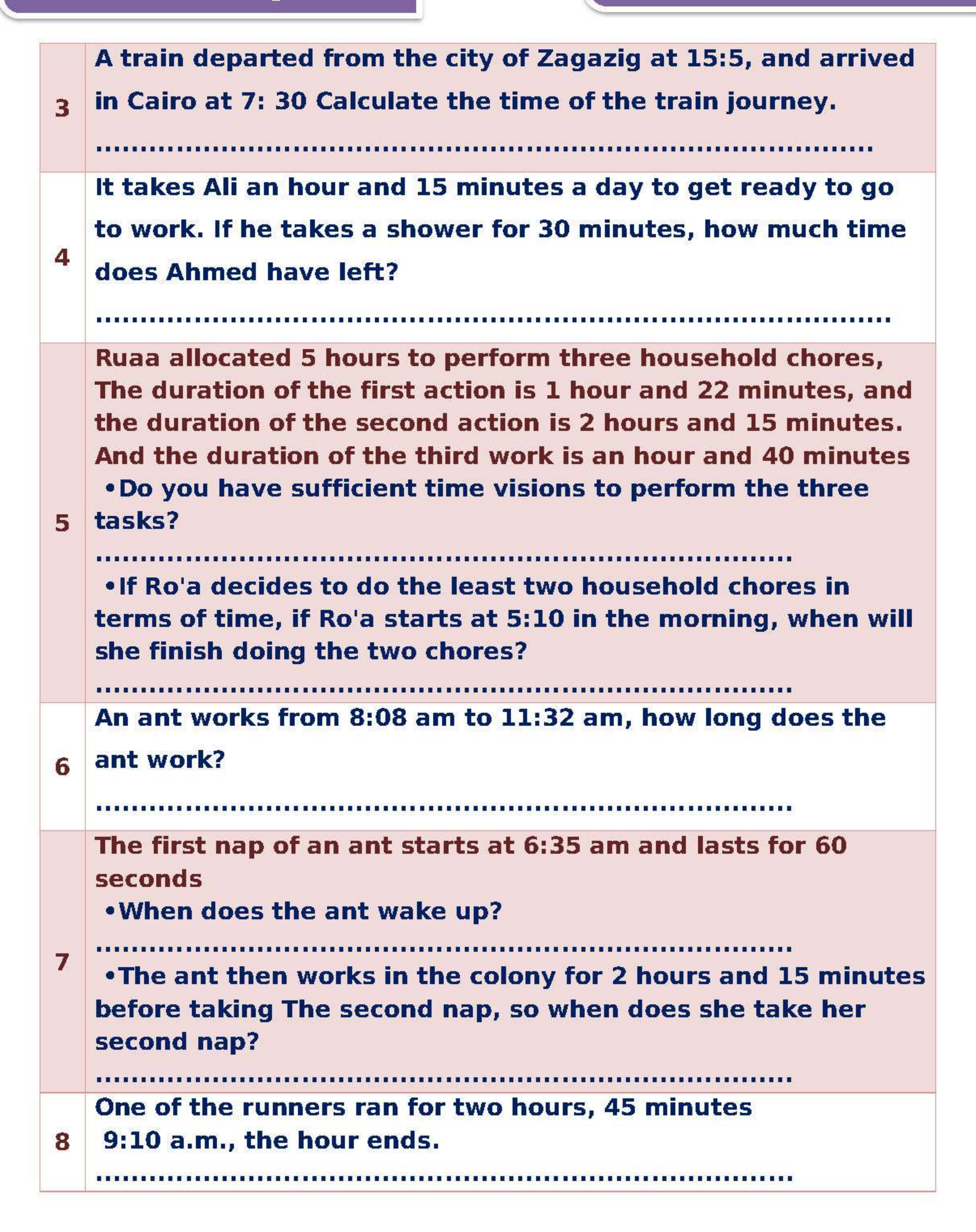
	Solution methods
1	Laila is shopping at the mall, and it took 2 hours and 40 min For lunch in the restaurant 50 minutes how long did it take • Using addition: 2 hours 40 minutes, 50 minutes  The time taken is = 3:30 • Using subtraction: 2 hours 40 minutes, 50 minutes  The time taken is = 3:30 • Addition without using a number line Hours : Minutes 2 : 40 : 50 2 : 90 The time taken is = 3:30

Subtract the hours and minutes	
2	Hours : Minutes 8 +60 90 ~~9~~ : ~~30~~ - 7 : 50 1 : 40

Example (1) Complete			
1	4 : 30 – 3 : 40 = ...	4	3 : 10 + 2 : 40 = ...
2	2 : 10 + 3 : 50 = ...	5	11 : 15 – 8 : 25 = ...
3	4 : 30 – 42 min = ...	6	8 : 00 – 15 min= ....

Example (2): - Complete			
1	4:20p.m →	6:30 p.m →	Elapsed time.............
2	2:20 a.m →	3:15 a.m →	Elapsed time.............
3	11:13p.m →	2:20 a.m →	Elapsed time.............
4	8:15a.m →	10:10 a.m →	Elapsed time.............

Example (3): - Complete as required	
1	If the procession moving the antiquities from the Egyptian Museum at 9:00 pm and stayed 30 minutes in its path until the end, then the time of arrival of the procession to the National Museum of Civilization is ....p.m
2	If Fayrouz started her study at 3:30 pm and finished at 1:30 pm 6:00p.m. What is the time spent studying ? ....



3	A train departed from the city of Zagazig at 15:5, and arrived in Cairo at 7: 30 Calculate the time of the train journey. ....
4	It takes Ali an hour and 15 minutes a day to get ready to go to work. If he takes a shower for 30 minutes, how much time does Ahmed have left? ....
5	Ruaa allocated 5 hours to perform three household chores, The duration of the first action is 1 hour and 22 minutes, and the duration of the second action is 2 hours and 15 minutes. And the duration of the third work is an hour and 40 minutes • Do you have sufficient time visions to perform the three tasks? .... • If Ro'a decides to do the least two household chores in terms of time, if Ro'a starts at 5:10 in the morning, when will she finish doing the two chores? ....
6	An ant works from 8:08 am to 11:32 am, how long does the ant work? ....
7	The first nap of an ant starts at 6:35 am and lasts for 60 seconds • When does the ant wake up? .... • The ant then works in the colony for 2 hours and 15 minutes before taking The second nap, so when does she take her second nap? ....
8	One of the runners ran for two hours, 45 minutes 9:10 a.m., the hour ends. ....

Exercises (5)

Example (1) Complete			
1	6 : 42 – 4 : 52 = ...	4	4 : 13 + 3 : 23 = ...
2	5 : 14 + 6 : 04 = ...	5	12 : 15 – 9 : 43 = ...
3	6 : 03 – 52min = ...	6	9 : 00 – 35min= ....

Example (2): - Complete	
1	5:53p.m → 7:43 p.m → Elapsed time.............
2	2:21 a.m → 6:41 a.m → Elapsed time.............
3	9:32p.m → 4:25 a.m → Elapsed time.............
4	7:47a.m → 3:41 a.m → Elapsed time.............

Example (3): - Complete as required	
1	A train departed from the city of Zagazig at 4:25 a.m , and arrived in Cairo at 6:30a.m Calculate the time of the train journey. ....
2	If Fayrouz started her study at 4:30 pm and finished at 5:00 p.m. What is the time spent studying ? ....
3	One of the runners ran for 1 hour, 35 min If the clock starts running 8:15 a.m , the hour ends. ....
4	It takes Ali every day 1 hour and 10 minutes to get ready to go to work. If he takes a shower for 20 minutes, how much time does Ahmed have left? ....

Measure the world around me 1, 2

The third unit Lesson (6-7)

Example (1) Complete	
1	Maryam drinks 3,500 milliliters of water a day? How many milliliters do you drink in 4 days? The number of milliliters that Maryam drank = …………………
2	Sameh exercises every day for half an hour. Calculate the number of minutes Sameh spends it doing sports in 3 days. Half an hour=……………………………………… a minute Total minutes = ………… x ……………=………… min
3	A 5 liter fish tank with 3,000 milliliters of water in it. How many liters of Water do we need to fill the entire fish tank? The volume of water contained in liters = ………… ÷ ………… = …………. liters The number of liters we need = ………… - ………… = …………. liters
4	Tamer runs 3 kilometers every day. How many kilometers does Tamer run in a week? The number of kilometers that Tamer runs =……………………
5	Mahmoud studies mathematics every day for 40 minutes, how many hours Which Mahmoud spends studying mathematics for 5 days? =………… x …………. =…………………… minutes
6	Musaab bought 36 kilograms of oranges and wants to distribute them evenly among 6 bags. How many kilograms are in each bag? Number of kilograms in each bag= ………………………………

Exercises (6)

Example (1) Complete	
1	A fast ant walks 4 km a day. What distance does the ant travel in 32 days in metres? ....
2	Basem's family buys 5 liters of milk every week, so if the family drinks 2,222 liters of it milliliters. Find the rest of the milk in millilitres . ...
3	Ahmed has a piece of wood 12 meters long that he wants to cut into 3 equal pieces Find the length of each piece in metres, then find its length in centimeters. ....
4	The ant walks 5,222 meters every day while it is going to search for food. How many kilometers does the ant walk in 6 days? ....
5	She bought a king of 3 kg and 370 grams of tomatoes and she bought potatoes less than the mass of tomatoes by 1,200 grams Calculate the mass of potatoes and tomatoes together potato mass = ... Mass of potato and tomato= ....
6	Muhammad reads the Qur'an every day for a quarter of an hour. What is the total number of minutes he spends reading in 4 days? ....
7	Sama plays on the bike from 5:15 pm to 7:25 pm. How long did she spend playing the game? ....
8	A fish tank with a capacity of 15 liters and 3,000 ml of water poured into it, how many liters do we need to fill the tank completely? ....

Exam (unit three)

Example (1) Choose the correct answer

(1)	5m, 34 cm = ... cm						
(A)	543	(B)	534	(C)	5,340	(D)	5,034
(2)	.............Liters = 3,000 milliliters.						
(A)	2	(B)	3	(C)	30	(D)	300
(3)	53kg = ... g						
(A)	53,000	(B)	2,030	(C)	20,030	(D)	5,000
(4)	An hour and a third of an hour = ... a minute						
(A)	40	(B)	20	(C)	55	(D)	80
(5)	Two days and two hours .... = an hour						
(A)	30	(B)	50	(C)	18	(D)	6
(6)	7liters, 780 ml - 150 ml = ... ml						
(A)	5,370	(B)	6,000	(C)	370	(D)	6,370
(7)	If the first half of the match started at 8:25 pm and ended at 9:33 pm, it would have taken .... minutes						
(A)	42	(B)	45	(C)	48	(D)	53

Example (2): - Complete

1	15decimals = ... cm
2	5kg, 700 grams = ... grams
3	In a jug containing 10 liters of water, the volume of water in milliliters = ...
4	4minutes and 20 seconds = ... seconds
5	10: 3 + 42 minutes = ...
6	4liters, 52 ml = ... ml
7	8meters, 1 decimeter = ... decimeter
8	72hours = ... days

Example (3) Choose the correct answer

(1)	5kg - 3,420 g = ... g						
(A)	1,580	(B)	4,580	(C)	3,580	(D)	5,580
(2)	250ml, 7 liters = ... g						
(A)	725	(B)	7,250	(C)	2,750	(D)	5,270
(3)	Adel spends 6 hours at school. If we want to calculate Adel's school day in minutes, we...						
(A)	We add 6 with 6	(B)	We add 6 to 24	(C)	We multiply 6 by 60	(D)	We multiply 6 by 24
(4)	A juice box has a capacity of 1 liter and 500 ml, then its capacity in milliliters = ... ml						
(A)	150	(B)	1,500	(C)	15,000	(D)	1,005
(5)	3weeks and 5 days						
(A)	21	(B)	24	(C)	25	(D)	26
(6)	8km, and 50 meters = ... meters						
(A)	5,800	(B)	850	(C)	8,050	(D)	8,500
(7)	9liters and 575 ml = ... ml						
(A)	9,575	(B)	5,759	(C)	584	(D)	575

Example (4): - Complete as required

1	Muhammad started work at 7:15 AM and finished at 10:55 AM Calculate the time spent at work. ....
2	Abeer has a 5 liter juice bottle, if she consumes 3,650 ml of it, how many milliliters are left in the bottle? ....
3	An ant walks 4 kilometers in one day. If the ant continues to walk for 5 days, what is the distance it travels in meters? ....
4	Arrange in ascending order : 3 meters , 999 cm , 8 mm , 8 km ....

Unit four Lesson (1)

Perimeter (measurement of lengths)

• Rectangle

- **Rectangle:** It is a quadrilateral in which all two opposite sides are equal in length and its four angles are equal in measure, and the measure of each of them = 90 degrees.
- **Perimeter of the rectangle:**
  is the length of the line that borders it from the outside .
- **The perimeter of a rectangle =**
  the sum of the lengths of its sides
  .

L

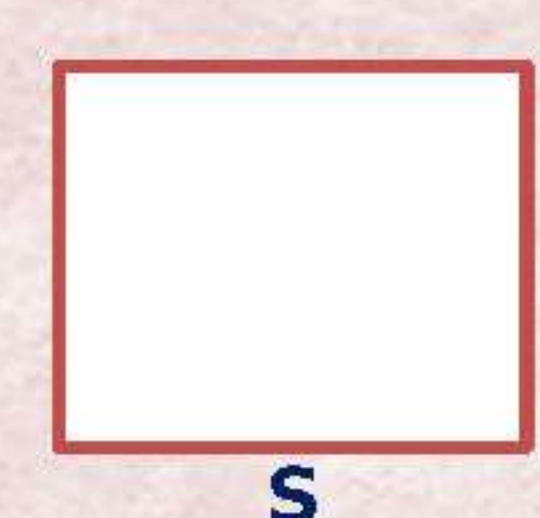
W

- **Perimeter of the rectangle =** (length + width) x 2
- **Perimeter of the rectangle =** (L + W) x 2

• Square

Square: It is a quadrilateral in which all its sides are equal in length and its four angles are equal in measure, and the measure of each of them = 90 degrees.

- **Perimeter of the square:**
  is the length of the line that borders it from the outside
- **The perimeter of a square =**
  the sum of the lengths of its sides.
- **perimeter of the square =** side length x 4
- **Perimeter of the square =** 4 × S



S

example	
1	rectangle has a length of 5 cm and a width of 3 cm. find its perimeter. Perimeter of the rectangle = (length + width) x 2 = (5+ 3)x 2 = 8 x 2 = 16 cm
2	A square of side length 5 cm. find its perimeter. Perimeter of the square = side x 4 = 5 x 4 = 20 cm

Example (1) Find the perimeter	
1	A rectangle of length 10m and width of 5m.find its perimeter. Perimeter of the rectangle= ....
2	rectangle of length 5cm and width of 4cm.find its perimeter. Perimeter of the rectangle= ....
3	rectangle of length 7cm and width of 2cm.find its perimeter. Perimeter of the rectangle= ....
4	A square of side length 4 cm. find its circumference. Perimeter of the square = ...
5	A square of side length 7 dm. find its circumference. Perimeter of the square = ...
6	A square of side length 13 m. find its circumference. Perimeter of the square =.......................................
7	A rectangle of length 6m and width of 3m.find its perimeter. Perimeter of the rectangle =...

Example (2) Find the perimeter of the figure		
1	8 cm 4 cm	Perimeter of the rectangle = ...
2	9 m 2 m	Perimeter of the rectangle = ...
3	5 dm 4dm	Perimeter of the rectangle = ...
4	5 cm 3cm	Perimeter of the rectangle = ...

Example (3) Find the perimeter of the figure

1	4 cm	Perimeter of the square =……………………… ………………………………………………………………
2	8 m	Perimeter of the square =……………………… ………………………………………………………………
3	5 dm	Perimeter of the square =……………………… ………………………………………………………………
4	8 m	Perimeter of the square =……………………… ………………………………………………………………

Example (4) Complete as required

1	A garden in the form of a square with a side length of 7 meters. ………………………………………………………………………………
2	A rectangle with a length of 7 dm and a width of 5 dm. find its perimeter. ………………………………………………………………………………
3	A rectangular court with dimensions of 9 m and a width of 6 m. find its perimeter. ………………………………………………………………………………
4	A square has a perimeter of 32 cm, find the length of its side ………………………………………………………………………………

Example (5) Complete as required

1	Draw three different shapes (square or rectangle) each with a perimeter of 20 cm ……………………………………………………………………………… ……………………………………………………………………………… ……………………………………………………………………………… ……………………………………………………………………………… ………………………………………………………………………………

Exercises (1)

Example (1) Find the perimeter	
1	A rectangle of length 3m and width of 2m.find its perimeter. Perimeter of the rectangle= ....
2	rectangle of length 7cm and width of 4cm.find its perimeter. Perimeter of the rectangle= ....
3	rectangle of length 5cm and width of 1cm.find its perimeter. Perimeter of the rectangle= ....
4	A square of side length 8 cm. find its circumference. Perimeter of the square = ...
5	A square of side length 9 dm. find its circumference. Perimeter of the square = ...
6	A square of side length 12 m. find its circumference. Perimeter of the square =......................................

Example (2) Find the perimeter of the figure		
1	8 cm 4 cm	Perimeter of the rectangle = ...
2	9 m 2 m	Perimeter of the rectangle = ...
3	5 dm 4dm	Perimeter of the rectangle = ...
4	5 cm 3cm	Perimeter of the rectangle = ...
5	20 cm 10cm	Perimeter of the rectangle = ...

Example (3) Find the perimeter of the figure

1	6 cm	Perimeter of the square =........................ ....
2	3 m	Perimeter of the square =........................ ....
3	1 dm	Perimeter of the square =........................ ....
4	11 mm	Perimeter of the square =........................ ....

Example (3) Complete as required

1	A garden in the form of a square with a side length of 8 meters. ....
2	A rectangle with a length of 5 dm and a width of 2 dm. find its perimeter. ....
3	A rectangular court with dimensions of 6 m and a width of 4 m. find its perimeter. ....
4	A square has a perimeter of 12 cm, find the length of its side ....

Example (4) Complete as required

1	Draw three different shapes (square or rectangle) each with a perimeter of 10 cm ....

Unit four
Lesson (2)

Area

•Rectangle

- Area: is the number of square units that make up the shape.
  - The area of the rectangle =
    is the number of square units that make up the figure.
- Area of the rectangle = Length x Width
- Area of the rectangle = L x W

• Square

- Area: is the number of square units that make up the shape.
  - The area of the square =
    is the number of square units that make up the shape.
  - Area of the square = side length × side length .
  - Area of the square = S × S .



• Measurement units

- The units of perimeter (P) are:

  Centimeter, meter, decimeter, millimeter.

- The units of area (A) are:

square centimeter, square meter, square decimeter, square mm

	example
1	A rectangle has a length of 5 cm and a width of 3 cm. find its area. The area of the rectangle = length x width = 5 x 3 = 15 cm^2
2	A square of side length 5 cm. find its area. The area of the square = side x side = 5 x 5 = 25 cm^2

Example (1) Complete	
1	A rectangle of length 10 m and width of 5 m. find its area. Area of the rectangle = ...
2	A rectangle of length of 5cm and a width of 4cm.find its area Area of the rectangle =..
3	A rectangle of length of 7cm and a width of 2 cm.find its area Area of the rectangle =..
4	A square of side length 4 cm. find its area. Area of the square =................................
5	A square of side length 7 dm. find its area. Area of the square =................................
6	A square of side length 13 m. find its area. Area of the square = ...
7	A rectangle of length of 6cm and a width of 3cm.find its area. Area of the rectangle =..

Example (2) Find the area of the figure		
1	8 cm 4 cm	Area of the rectangle = ...
2	8 dm 4 dm	Area of the rectangle = ...
3	8 m 4 m	Area of the rectangle = ...

Example (3) Find the area of the figure			
1	4 cm		Area of the square=............................... ....
2	8 m		Area of the square=............................... ....
3	5 dm		Area of the square=............................... ....
4	9 mm		Area of the square=............................... ....

Example (4) Complete as required

1	A garden in the form of a square with a side length of 7 m. ....
2	A rectangle with a length of 6 dm and a width of 3 dm. find its area. ....
3	A rectangle with a length of 7 dm and a width of 5 dm. find its area. ....
4	A square has an area of 25 cm^2, find the length of its side ....

Example (5) Complete as required

1	Draw three different shapes (square or rectangle) each with an area of 16 cm^2 ....

Exercises (2)

Example (1) Complete	
1	A rectangle of length 3 m and width of 2 m. find its area. Area of the rectangle = ...
2	A rectangle of length of 7cm and a width of 4cm.find its area Area of the rectangle =...
3	A rectangle of length of 5cm and a width of 1 cm.find its area Area of the rectangle =...
4	A square of side length 8 cm. find its area. Area of the square =..................................
5	A square of side length 9 dm. find its area. Area of the square =..................................
6	A square of side length 12 m. find its area. Area of the square = ...

Example (2) Find the area of the figure		
1	6 cm, 2 cm	Area of the rectangle = ...
2	7 dm, 3 dm	Area of the rectangle = ...
3	9 m, 3 m	Area of the rectangle = ...
4	8 dm, 2 dm	Area of the rectangle = ...
5	10 m, 5 m	Area of the rectangle = ...

Example (3) Find the area of the figure		
1	6 cm	Area of the square=................................ ....
2	3 m	Area of the square=................................ ....
3	1 dm	Area of the square=................................ ....
4	11 mm	Area of the square=................................ ....

Example (4) Complete as required	
1	A garden in the form of a square with a side length of 8 m. ....
2	A rectangle with a length of 5 dm and a width of 2 dm. find its area. ....
3	A rectangle with a length of 6 m and a width of 4 m. find its area. ....
4	A square picture with a side length of 8 cm. If Hussein wanted to buy a piece of glass to cover this picture. What is the area of the piece of glass used? ....
5	A square table of side length 2 metres . find its area ....
6	A square whose perimeter is 12 cm, find the length of its side ....

Unit four lesson (3)

Unknown dimensions

•Rectangle

- If I have the Perimeter, find it as follows

  Length of rectangle = half of the perimeter - width

  Width of a rectangle = half of the perimeter - length
- If I have the area , find it as follows

  Length of rectangle = Area ÷ Width

  Width of rectangle = Area ÷ length

• Square

- Side length = perimeter ÷ 4

  Example: A square has a perimeter of 20 cm

  Side length = 4 ÷ 20 = 5 cm
- If I have the area of the square, find the length of the side as follows

  Example: A square has an area of 25 cm^2

  I ask myself what is the number that I multiply by itself and the result is 25

  So the length of the side = 5 cm

Example	
1	A rectangle has a perimeter of 20 m and a width of 4 m. find its length Half perimeter = 10 cm Length of the rectangle = half of the perimeter - width = = 4 - 10 = 6 cm
2	A rectangle has an area of 20 square meters and a width of 4 meters. find its length Length of rectangle = Area ÷ Width = 4 ÷ 20 = 5 cm

Example (1) Complete		
1	8 cm, P=30 cm	Half perimeter = …………………… width =………………………………………
2	15 cm, P=44 cm	Half perimeter = …………………… width =………………………………………
3	6 cm, A =30 cm^2	width =………………………………………
4	7 cm, A =28 cm^2	width =………………………………………
5	P=44 cm	side of the square = …………………………… ………………………………………………
6	A = 16 cm^2	side of the square =…………………………… ………………………………………………
7	A = 64 cm^2	side of the square = …………………………… ………………………………………………

Example (2) Complete as required	
1	A square with a perimeter of 40 cm has an area of. the side of the square = …………………… The area =………………
2	A square with a perimeter of 36 cm has an area of. the side of the square = …………………… The area =………………
3	A square has an area of 81 cm^2, then its perimeter is. Side of square = ……………… ,Perimeter =……………………………
4	A square has an area of 81 cm^2, then its perimeter is. Side of square = ……………… ,Perimeter =……………………………
5	A rectangle has an area of 10 cm^2, find its perimeter if its width is 2 cm. Length= …………………………………………………………… Perimeter of the rectangle= ………………………………………

6	A rectangle has an area of 60 dm^2, find its perimeter if its length is 10 dm . width = ... Perimeter of the rectangle= ....
7	A rectangle has a perimeter of 60 dm, find its area if its length is 20 dm. width = ... Perimeter of the rectangle= ....
8	A rectangle has a perimeter of 40 dm, find its area if its length is 11 dm. width = ... The area of the rectangle= ....
9	A rectangle whose width is 3 cm and its length is twice its width, then its length = ...
10	A rectangle whose length is 8 cm and whose width is half its length, then its width = ...
11	Muhammad wants to build a barn for goats in the form of a rectangle, its area is 72 square meters, and one of its sides is 12 meters. Determine the width in meters. Then find the perimeter of the barn. ....
12	Karim wants to build a fence around his garden, and the width of the fence is 20 meters, and he needs 100 meters of wire to surround his garden. Find the length of the garden ....

Exercises (3)

Example (1) Complete		
1	4 cm P=12 cm	Half perimeter = ... width =..
2	4 cm A =12 cm^2	width =..
3	P=40 cm	side of the square = ... Square area = ...
4	A = 1 cm^2	side of the square =................................ Perimeter square = ...

Example (2) Complete as required	
1	A square with a perimeter of 8 cm has an area of. the side of the square = ... The area =..................
2	A square has an area of 49 cm^2, then its perimeter is. Side of square = ... ,Perimeter =................................
3	A rectangle has an area of 40 cm^2, find its perimeter if its Length is 10 cm. width = ... Perimeter of the rectangle= ....
4	A rectangle has a perimeter of 40 dm, find its area if its length is 15 dm. width = ... The area of the rectangle= ....
5	A rectangle has a perimeter of 40 dm, find its area if its length is 15 dm. width = ... Perimeter of the rectangle= ....
6	A rectangle whose width is 5 cm and its length is twice its width, then its length = ...
7	Farid wants to build a stadium in the shape of a rectangle, its area is 48 square meters, and one of its sides is 8 meters. Determine the width in meters. Then find the perimeter of the field. ....

Unit four Lesson (4)

Irregular geometric shapes (compound)

•Methods of solving compound shapes

- **Composite shape:** It is a form consisting of simple geometric shapes.
- **The first method**

We divide the shape into two rectangles, and calculate the area of each rectangle separately, then add the areas of the two rectangles to find the area of the shape.

- **The second method**

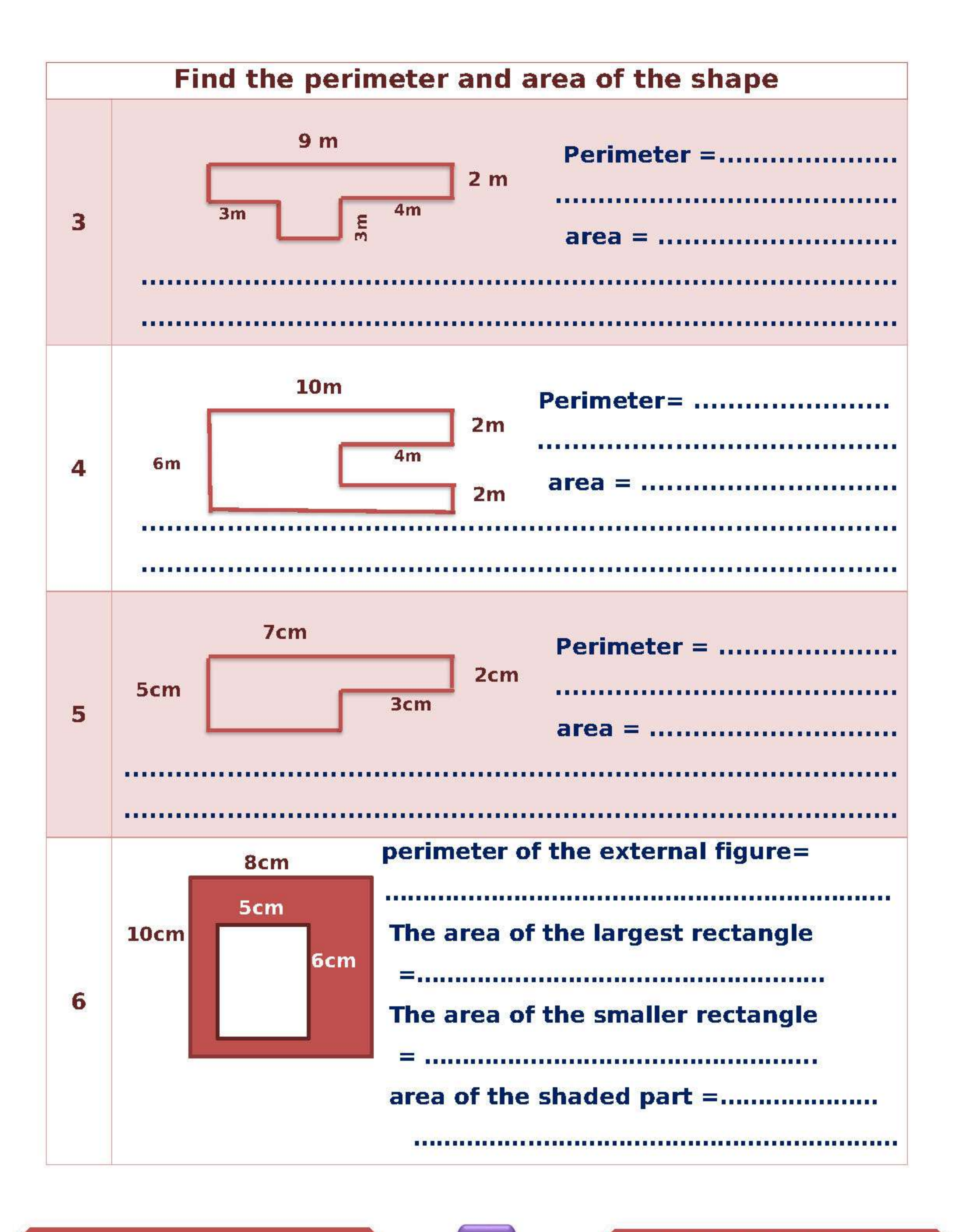
We complete drawing the shape to get a large rectangle and a small rectangle, calculate the area of the large and small rectangles, then subtract the two areas to find the area of the shape.

- **Note :**

The perimeter and area of a compound figure do not change when it is divided in different ways.

Find the perimeter and area of the shape

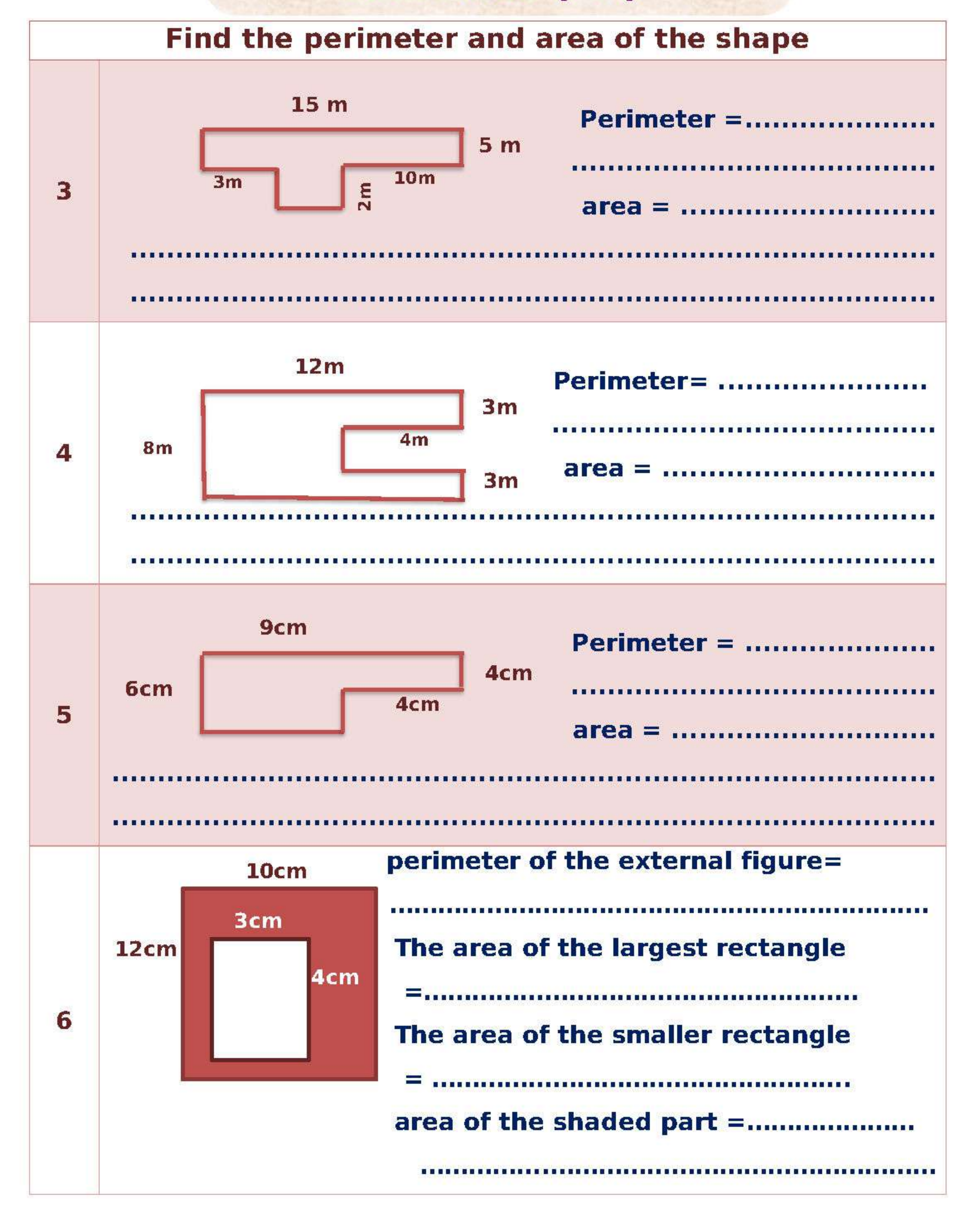
1	14cm, 7cm, 9cm, 6cm, 8cm Perimeter = …………………… …………………………………… The area of the largest rectangle = …………………… Area of the smaller rectangle =……………… Area of the figure = ……………………………
2	6cm, 8cm, 4cm, 4cm perimeter of the external figure= …………………………………………………… The area of rectangle=…………………… Square area = …………………………… area of the shaded part =……………… ……………………………………………………



Find the perimeter and area of the shape

3	9 m, 2 m, 3m, 4m, 3m Perimeter =………………… …………………………………… area = …………………… ………………………………………………………………… …………………………………………………………………
4	10m, 2m, 6m, 4m, 2m Perimeter= …………………… …………………………………… area = …………………… ………………………………………………………………… …………………………………………………………………
5	7cm, 5cm, 2cm, 3cm Perimeter = ………………… …………………………………… area = …………………… ………………………………………………………………… …………………………………………………………………
6	8cm, 5cm, 10cm, 6cm perimeter of the external figure= …………………………………………………… The area of the largest rectangle =………………………………………… The area of the smaller rectangle = ………………………………………… area of the shaded part =………………… ……………………………………………………

Exercises (4)



Find the perimeter and area of the shape

3	15 m; 5 m; 3m; 2m; 10m Perimeter =.................... .... area = ...
4	12m; 3m; 8m; 4m; 3m Perimeter= .... area = ...
5	9cm; 4cm; 6cm; 4cm Perimeter = ... area = ...
6	10cm; 3cm; 12cm; 4cm perimeter of the external figure= .... The area of the largest rectangle =.. The area of the smaller rectangle = ... area of the shaded part =.................... ....

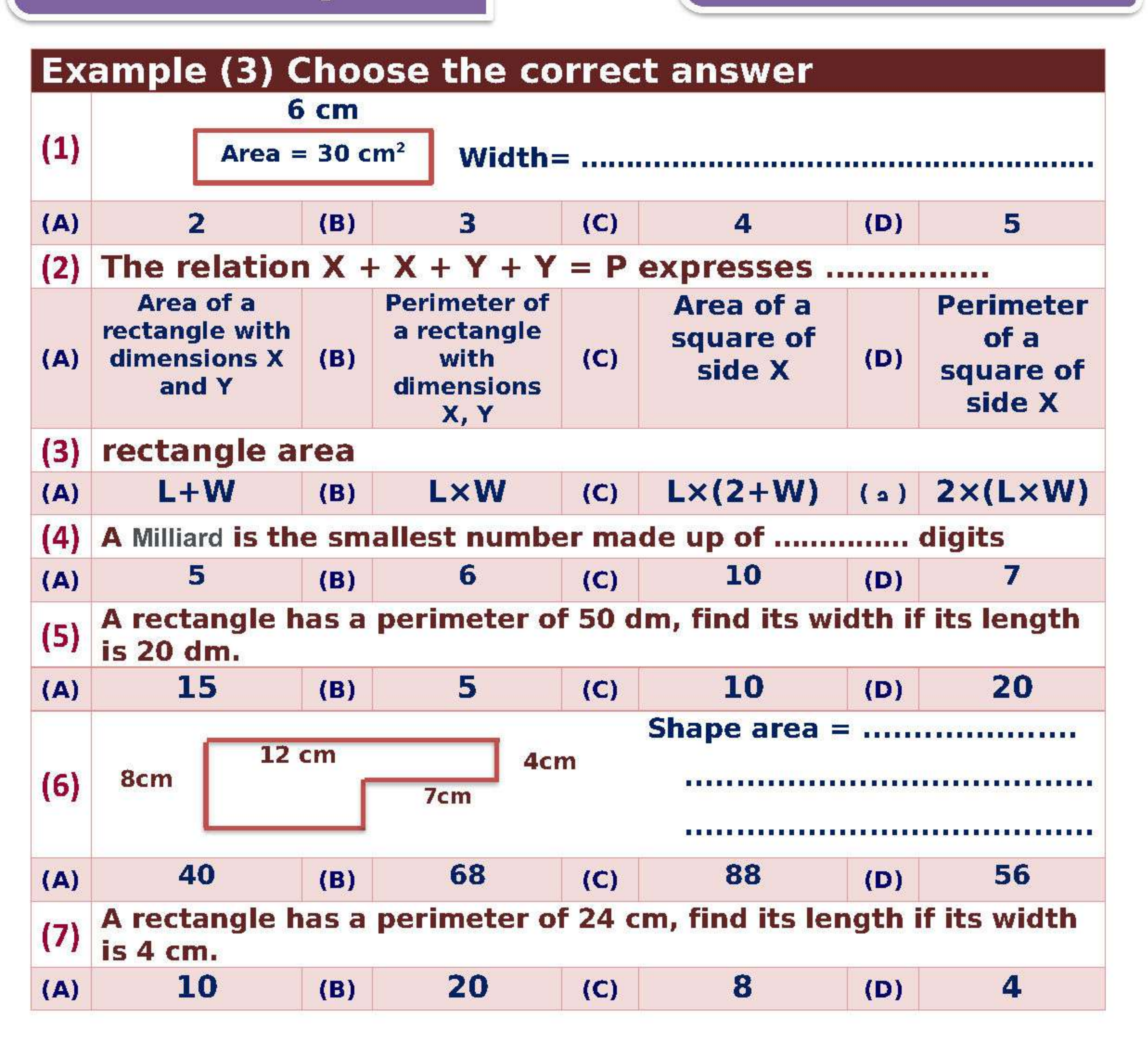
Exam (unit four)

Example (1) Choose the correct answer

(1)	Area of a square = side length x.............						
(A)	Perimeter	(B)	side length	(C)	Area	(D)	otherwise
(2)	If a rectangle has a length of 5 cm and a width of 3 cm, then its perimeter = ... cm						
(A)	16	(B)	15	(C)	18	(D)	8
(3)	A square whose side length is 5 cm has a perimeter = ... cm						
(A)	150	(B)	20	(C)	25	(D)	30
(4)	A square has an area of 25 cm^2, and its side length = ... cm						
(A)	5	(B)	50	(C)	100	(D)	10
(5)	A rectangle of length L and width W, then its perimeter = ... cm						
(A)	L+W	(B)	2×(L+W)	(C)	L×(2+W)	(D)	2×(L×W)
(6)	If a rectangle has a length of 20 cm and a width of 10 cm, then its area = ... cm^2						
(A)	30	(B)	60	(C)	120	(D)	200
(7)	A rectangular garden whose width is 5 meters and its length is 7 meters. What is the area of the garden? .... M^2						
(A)	24	(B)	70	(C)	35	(D)	12

Example (2): - Complete

1	A square has an area of 49 cm2, then its perimeter is. Side length of a square = ... Perimeter of the square= ....
2	Perimeter of the rectangle = ...
3	A rectangle with a length of 5 dm and a width of 2 dm. find its Perimeter. ....
4	A square of side length 8 cm. find its circumference. Perimeter of the square = ...
5	side length of a square = perimeter ÷ ....
6	A square-shaped table, the side length of which is 4 m. Maryam wants to cover it with a tablecloth, so the area of the tablecloth = ... square metres
7	A rectangle with dimensions M cm and N cm, its area can be calculated from the relationship : ....
8	A square has a perimeter of 36 cm, then its side length = ... cm



Example (3) Choose the correct answer

(1)	6 cm Area = 30 cm²		Width=				
(A)	2	(B)	3	(C)	4	(D)	5
(2)	The relation X + X + Y + Y = P expresses						
(A)	Area of a rectangle with dimensions X and Y	(B)	Perimeter of a rectangle with dimensions X, Y	(C)	Area of a square of side X	(D)	Perimeter of a square of side X
(3)	rectangle area						
(A)	L+W	(B)	L×W	(C)	L×(2+W)	(د)	2×(L×W)
(4)	A Milliard is the smallest number made up of .... digits						
(A)	5	(B)	6	(C)	10	(D)	7
(5)	A rectangle has a perimeter of 50 dm, find its width if its length is 20 dm.						
(A)	15	(B)	5	(C)	10	(D)	20
(6)	8cm, 12 cm, 4cm, 7cm		Shape area = ...				
(A)	40	(B)	68	(C)	88	(D)	56
(7)	A rectangle has a perimeter of 24 cm, find its length if its width is 4 cm.						
(A)	10	(B)	20	(C)	8	(D)	4

Example (4): - Complete as required

1	Swimming pool in the form of a rectangle 12 m long and 8 m wide Calculate its circumference ....
2	A carpet in the shape of a square with a side length of 3 m. Find its area ....
3	A carpenter wants to cover a table, so if its dimensions are 4m by 6m, how many square meters of wood is needed to cover the table? ....

Fifth unit
Lesson (1)

Understand comparison using multiplication

• to learn

- Note that: 20 = 4 x 5
- We can say: 20 = 4 times the number 5
- Or 20 = 5 times the number 4

5	5	5	5

4	4	4	4	4

Example (1) Compare and write the comparative sentence			
1	15 , 3	→	15 = ……… times the number 3
2	20 , 4	→	20 = ……… times the number 4
3	6 , 24	→	24 = ……… times the number 6
4	1 , 3	→	3 = ……… times the number 1
5	28 , 7	→	28 = ……… times the number 7

Example (2) Rewrite each equation using multiplication as an example			
1	9 = 3 × 3	←	3 + 3 + 3 = 9
2	……… = …… × …….	←	4 + 4 = 8
3	……… = …… × …….	←	9 + 9 + 9 + 9 = 36
4	……… = …… × …….	←	5 + 5 + 5 = 15
5	……… = …… × …….	←	4 + 4 + 4 + 4 = 20

Example (3) Find the number	
1	A number equals 5 times 4 c = 5 x 4
2	6 is equal to 3 times this number ……. x …… = …….. so the number = ……
3	A number equal to twice the number 7 ……. x …… = …….. then the number=……
4	35 equals 5 times this number ……. x …… = …….. so the number = ……
5	28 is equal to 4 times this number ……. x …… = …….. so the number = ……

Example (4) Complete	
1	What number is 4 times 8 ? Equation: a = 8 x 4 Solution a = ………………
2	36 equals 6 times this number. What is the number? Equation: 36 = R x 6 Solution R= ………………

Example (5) Complete	
1	24 is equal to 4 times the number 6, the multiplication equation = ………………………..
2	14 is equal to 7 times the number 2, the multiplication equation = …………………………………..
3	60 is equal to 10 times the number 6, the multiplication equation = …………………………..

Example (6) Complete	
1	…………….equals ……….. times 4 4 4 4 4
2	…………….equal to ……….. times 9 9 9
3	…………….equal to ……….. times 7 7 7 7 7

Exercises (1)

Example (1) Compare and write the comparative sentence	
1	9 , 3 → 9 = ……… times the number 3
2	20 , 5 → 20 = ……… times the number 5
3	36 , 6 → 36 = ……… times the number 6

Example (2) Rewrite each equation using multiplication as an example	
1	……… = …… × ……. ← 3 + 3 = 6
2	……… = …… × ……. ← 5 + 5 = 10
3	……… = …… × ……. ← 6 + 6 + 6 + 6 = 24

Example (3) Find the number	
2	4 is equal to 3 times this number ……. x …… = …….. so the number = ……
3	A number equal to twice the number 6 ……. x …… = …….. then the number=……
4	30 equals 6 times this number ……. x …… = …….. so the number = ……

Example (5) Complete	
1	20 is equal to 4 times the number 5 , the multiplication equation = ………………………
2	21 is equal to 7 times the number 3, the multiplication equation = ………………………………….
3	30 is equal to 10 times the number 3 , the multiplication equation = …………………………

Example (6) Complete	
1	…………….equals ……….. times 6 6 | 6 | 6
2	…………….equals ……….. times 9 9 | 9 | 9 | 9

Fifth unit
Lesson (2 - 3)

Create equations to compare using multiplication
Solve equations to compare using multiplication

- Muhammad ate 4 pieces of cake and Fayrouz ate 5 times more. How many pieces did Fayrouz eat?
  - Composition of the equation: R = 4 x 5
  - Solve the equation: R = 20
  - What Fayrouz ate = 4 x 5 = 20 pieces
  - Note: The solution to the equation is to find the value of the unknown symbol in the equation.

Example (1) Write an equation to express each of the following comparisons Use a symbol to represent the unknown number	
1	60 is 10 times the number .... The equation : .... Solve the equation: ....
2	20 is 4 times the number .... The equation : .... Solve the equation: ....
3	A number equals 5 times the number 6 The equation : .... Solve the equation: ....
4	A number equals 7 times the number 5 The equation : .... Solve the equation: ....

Exercises (2)

Example (1) Write an equation to express each of the following comparisons Use a symbol to represent the unknown number	
1	27 is 9 times the number ………. The equation : ………………………………………. Solve the equation: …………………………………………………
2	18 is 6 times the number ………. The equation : ………………………………………. Solve the equation: …………………………………………………
3	A number equals 8 times the number 3 The equation : ………………………………………. Solve the equation: …………………………………………………

Example (1) Write a multiplication equation that expresses the following word problems	
1	Muhammad has 6 books with him, and Ahmed has three times what he has. How many books does Ahmed have? The equation : ………………………………………. Solve the equation: …………………………………………………
2	The age of a son is 6 years old, and his father's age was 5 times that now, so what is the age of the father? The equation : ………………………………………. Solve the equation: …………………………………………………
3	Ayman ate 4 figs in the morning, and his brother ate 3 times .that number The equation : ………………………………………. Solve the equation: …………………………………………………
4	A box contains 8 green balls and the number of yellow balls .is 4 times the green one The equation : ………………………………………. Solve the equation: …………………………………………………
5	Find the value of the unknown symbol $5 \times 9 = S$ $3 \times N = 21$ $6 \times 4 = A$ …….. = S …….. = N …….. = A

commutative property of multiplication
Patterns of Multiplying by 10s

Fifth unit
Lesson (4 - 5)

•Properties of the multiplication process

- **commutative property**
  $a \times b = b \times a$, $7 \times 5 = 5 \times 7$
- **Zero property multiplication**
  When multiplying any number by zero, the result of the multiplication is zero.
  $2 \times 0 = 0 \times 2 = 0$, $235 \times 0 = 0 \times 235 = 0$
- **Identity property multiplication**
  When multiplying any number by one, the product of the multiplication will be the same number
  $6 \times 1 = 1 \times 6 = 6$, $728 \times 1 = 1 \times 728 = 728$
- **Associative Property in multiplication**
  $a \times b \times c = (a \times b) \times c = a \times (b \times c) = abc$
  When multiplying any three numbers, the product of the product does not change by moving the brackets:
  $6 \times 2 \times 5 = (6 \times 2) \times 5 = 6 \times (2 \times 5)$
  $= 12 \times 5 \quad = 6 \times 10 \quad = 60$

Example (1) Use the commutative properties to complete the equation		
1	4 × 9 = 9 × .... ،	.... × 5 = 5 × 8
2	1 × 5 = ... × 1 ،	7 × .... = 3 × 7
3	.... = V ،	V × 4 = 4 × 6
4	.... = E ،	1 × 8 = E × 8
5	.... = S ،	S × 15 = 15 × 35

Example (2) Complete	
1	.... = 1 × 532 ، .... = 16 × 1 ، .... = 4 × 0

Example (3) Complete		
1	7 × 0 = ...	property.............................
2	5 × 1 = ...	property.............................
3	.....x 4 = 4 x 3	property.............................
4	.... × 1 = 324	property.............................
5	.....x 4 =....... x 7	property.............................
6	.... × (7 ×4)=(3 × 7) ×4	property.............................
7	10× (..... × 5)= 10 ×(9×5)	property.............................

Example (4) Using properties of multiplication			
1	5 × 8 × 2 = ...	5	100 × 4 × 7 = ...
2	25 × 9 × 4 = ...	6	125 × 5 × 8 = ...
3	50 × 8 × 2 = ...	7	20 × 6 × 5 = ...
4	150 × 3 × 2 = ...	8	10 × 4 × 7 = ...

• Patterns of multiplication in tens

• **Important:**

When multiplying any number by 1000, 100, 10
The product of the multiplication is increased by the same number of zeros

Example :

3 × 10 = 30 , 7 × 100 = 700 , 9 × 1,000 = 9,000

Example (4) Complete

1	10 × 5 = 50	9	100 × 9 = 50
2	10 × …….. = 60	10	100 × …….. = 400
3	10 × …….. = 800	11	100 × …….. = 5,400
4	10 × …….. = 5,600	12	100 × …….. = 10,000
5	10 × …….. = 2,000	13	100 × …….. = 7,600
6	1,000 × ……. = 9,000	14	70 × 4 = …………………
7	1,000 × ……. = 120,000	15	300 × 40 = ……………….
8	1,000 × ……. = 14,000	16	50 × 90 = …………………

Example (5) Complete

1	20 × …….. = 240	9	40 × …….. = 3,200
2	30 × …….. = 240	10	70 × …….. = 490
3	800 × …….. = 3,200	11	60 × …….. = 5,400
4	700 × …….. = 5,600	12	80 × …….. = 8,000

5	81 × .... = 81,000	13	150 × .... = 15,000
6	1,000 × .... = 4,000	14	50 × 4 = ...
7	1,000 × .... = 31,000	15	82 × 10 = ...
8	1,000 × .... = 20,000	16	40 × 60 = ...

Example (6) Complete	
1	A family consumes 4 chickens per week, so if the price is for one chicken 100 pounds, so find the price of 4 chickens. ....
2	If the mass of a child is 5 kg, and the mass of an elephant is 100 times the mass of the child, find the mass of the child. ....
3	If the price of buying an electrical device is 500 pounds, then what are 10 devices of the same type? ....
	The number that is equal to 10 times the number 45 is ....
4	Alia has 40 books. Write an equation using the commutative property of multiplication to describe two ways she can arrange the books. ....

Exercises (3)

Example (1) Use the commutative properties to complete the equation		
1	$6 \times 7 = 7 \times$ .... ،	.... $\times 12 = 12 \times 23$
2	$1 \times 9 =$ .... $\times 1$ ،	$5 \times$ .... $= 2 \times 5$
3	.... = V ،	$V \times 3 = 3 \times 5$
4	.... = E ،	$1 \times 4 = E \times 4$
5	.... = S ،	$S \times 22 = 22 \times 26$

Example (2) Complete	
1	.... $= 1 \times 636$ ، .... $= 14 \times 1$ ، .... $= 6 \times 0$

Example (3) Complete		
1	0 = ...x 9	property..............................
2	1 = ...x 3	property..............................
3	.....x 5 = 5 x 6	property..............................
4	1 = 672x	property..............................
5	.....x 6 = ... x 3	property..............................

Example (4) Complete			
1	$10 \times 5 =$	5	$100 \times 9 =$ ....
2	$10 \times$ .... $= 300$	6	$100 \times$ .... $= 800$
3	$10 \times$ .... $= 210$	7	$100 \times$ .... $= 3,500$
4	$10 \times$ .... $= 3,700$	8	$100 \times$ .... $= 20,000$

Example (5) Complete			
1	$80 \times$ .... $= 240$	2	$70 \times$ .... $= 14,000$
3	$700 \times$ .... $= 3,500$	4	$30 \times$ .... $= 2,700$
5	$1,000 \times$ .... $= 6,000$	6	$30 \times 40 =$ ....

Example (6) Using properties of multiplication			
1	5 × 8 × 2 = ………………………………… …………………………………	5	100 × 4 × 7 = ………………………………… …………………………………
2	25 × 9 × 4 = ………………………………… …………………………………	6	125 × 5 × 8 = ………………………………… …………………………………
3	50 × 8 × 2 = ………………………………… …………………………………	7	20 × 6 × 5 = ………………………………… …………………………………
4	150 × 3 × 2 = ………………………………… …………………………………	8	10 × 4 × 7 = ………………………………… …………………………………

Example (6) Complete	
1	A family consumes 3 chickens per week, so if the price is for one chicken 200 pounds, so find the price of 3 chickens. …………………………………………………………
2	If the mass of a child is 13 kg, and the mass of an elephant is 100 times the mass of the child, find the mass of the child. …………………………………………………………
3	If the price of buying an electrical device is 400 pounds, then what are 100 devices of the same type? …………………………………………………………
4	The number that is equal to 100 times the number 17 is …………………………………………………………
5	Alia has 30 books. Write an equation using the commutative property of multiplication to describe two ways she can arrange the books. …………………………………………………………

Associated Property

Fifth unit
Lesson (6)

- **Associative Property in multiplication**

$a \times b \times c = (a \times b) \times c = a \times (b \times c) = abc$

When multiplying any three numbers, the product of the product does not change by moving the brackets:

$6 \times 2 \times 5 = (6 \times 2) \times 5 = 6 \times (2 \times 5)$

$= 12 \times 5 \quad = 6 \times 10 \quad = 60$

Example (1) Use the commutative properties to complete the equation	
1	$4 \times 2 \times 3 = 4 \times (2 \times 3) = 4 \times 6 = 24$
2	5 × 4 × 7 = ……… × (…… × ……) = ……. × ……. = ………..
3	7 × 2 × 8 = ……… × (…… × ……) = ……. × ……. = ………..
4	6 × 3 × 4 = ……… × (…… × ……) = ……. × ……. = ………..
5	8 × 3 × 9 = ……… × (…… × ……) = ……. × ……. = ………..
6	10 × 4 × 7 = ……… × (…… × ……) = ……. × ……. = ………..
7	100 × 2 × 8 = ……… × (…… × ……) = ……. × ……. = ………..
8	1,000 × 3 × 4 = …….. × (…… × ……) = ……. × ……. = ………
9	100 × 3 × 9 = ……… × (…… × ……) = ……. × ……. = ………..
10	10 × 6 × 2 = ……… × (…… × ……) = ……. × ……. = ………..

Example (2) Complete			
1	30 = ……………. tens	4	7 × 70 = …………….
2	3,500 = ………Hundreds	5	8 × 5,000 = …………….
3	4,000 = ………Hundreds	6	4 × 300 = …………….

Exercises (4)

Example (1) Use the commutative properties to complete the equation	
1	4 × 4 × 2 = ... × (...... × ......) = ... × .... = ...
2	6 × 3 × 7 = ... × (...... × ......) = ... × .... = ...
3	4 × 2 × 9 = ... × (...... × ......) = ... × .... = ...
4	7 × 3 × 2 = ... × (...... × ......) = ... × .... = ...
5	5 × 6 × 2 = ... × (...... × ......) = ... × .... = ...
6	10 × 4 × 7 = ... × (...... × ......) = ... × .... = ...
7	100 × 2 × 8 = ... × (...... × ......) = ... × .... = ...
8	1,000 × 3 × 4 = ... × (...... × ......) = ... × .... = ...

Example (2) Complete			
1	90 = ... tens	4	7 × 90 = ...
2	9,600 = ...Hundreds	5	4 × 6,000 = ...
3	6,000 = ...Hundreds	6	4 × 500 = ...

Example (3) Complete	
1	8boxes of fruit, each box contains 6 bags, in each bag 4 kg. How many kilograms in the box ....
2	With Salma 4 cans. Each box contains 8 bags, each bag contains 100 balloons. How many balloons? ....
3	3 colonies of ants, each colony has 5 groups, and each group contains 1,000 ants How many ants. ....

Exam (unit five)

Example (1) Choose the correct answer

(1)	Identity of multiplication is						
(A)	0	(B)	1	(C)	2	(D)	10
(2)	3 times the number 9 is						
(A)	3	(B)	9	(C)	27	(D)	39
(3)	The value of the unknown A in the equation: 18 = A × 6 is						
(A)	24	(B)	16	(C)	168	(D)	3
(4)	45is equal to .... times the number 5						
(A)	9	(B)	6	(C)	5	(D)	40
(5)	3 × 4,000 = 3 × 4 ×						
(A)	10	(B)	100	(C)	1,000	(D)	10,000
(6)	500 = ... tens						
(A)	5	(B)	50	(C)	500	(D)	5,000
(7)	Which of the following equations shows the commutative property of multiplication ?						
(A)	1×3=3	(B)	4×3=3×4	(C)	4×(5×3) (4×5)×3=	(D)	0=0×4

Example (2): - Complete

1	.... × 12 = 12 × 48
2	50 equals 5 times the number.................
3	.......×5=6+6+6+6+6
4	3 × (2 × 5) = ...
5	.... = M : ، 7 × 4 = M
6	.... = 10 × 5
7	10times the number 9 equals................................
8	.... = 6 × 5 × 4

Example (3) Choose the correct answer

(1)	$0 \times 35 =$						
(A)	0	(B)	35	(C)	350	(D)	305
(2)	7 / 7 / 7 The corresponding bar chart shows that the number .... is equal to 3 times the number 7						
(A)	7	(B)	3	(C)	21	(D)	49
(3)	The number .... is equal to 6 times the number 3						
(A)	6	(B)	9	(C)	18	(D)	36
(4)	The equation that expresses that a number is 10 times the number 5 is...............						
(A)	A=10+5	(B)	A=10×5	(C)	A=10 - 5	(D)	10=A×5
(5)	$2 \times 3 \times 4 =$						
(A)	12	(B)	30	(C)	24	(D)	5
(6)	$5 \times A = 5 \times 7$ ، A = ...						
(A)	35	(B)	12	(C)	7	(D)	5
(7)	$(3 \times 6) \times 7 = 3 \times (6 \times 7)$ A property is called						
(A)	commutation property	(B)	Identity of multiplication	(C)	Associative property	(D)	Multiplication by zero

Example (4): - Complete as required

1	Ayman ate 3 apples, and his brother ate 4 times what Ayman ate. How many apples did his brother eat? ....
2	If the price of an electrical device is 400 pounds, what is the price of 10 devices of the same type? ....
3	Doaa bought 3 boxes of pens, each box contains 4 pens, so if the price of one pen 5 pounds, what is the price of the pens that Doaa bought? ....
4	Find using properties of multiplication $6 \times 2 \times 5$ ....

Determine the factors of integers

Unit Six
Lesson (1)

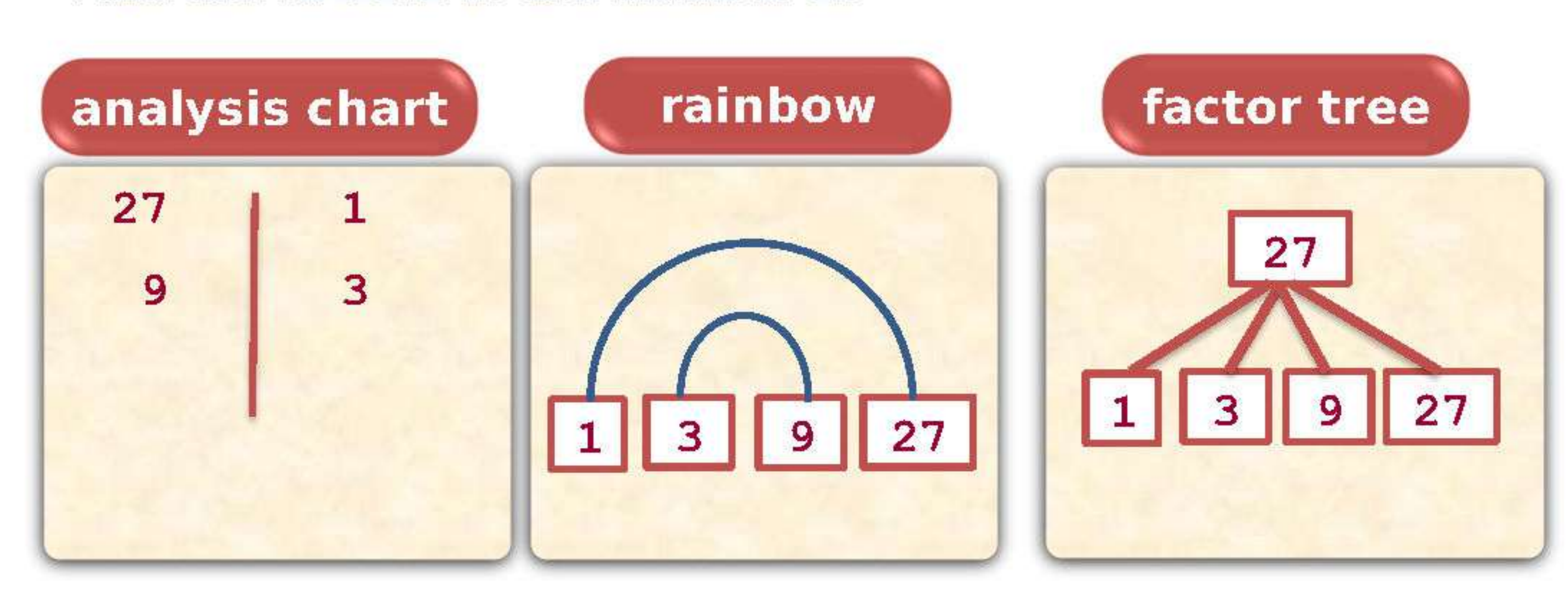
• Number factors

Number Factors: It is the analysis of the number by writing it in the form of the product of a number More For example, the factors of 15 are 15, 1, 5, and 3

- One is a common factor for all numbers.
- When writing the factors, do not repeat the factors.
- Zero is not a factor of any number.
- Every number is a factor of itself except for zero.

• Methods of finding the factors of a number

- Find the factors of the number 27



Example (1) Find the factors of the following numbers	
1	The factors of 6 are...
2	The factors of 8 are...
3	The factors of 10 are...
4	The factors of 12 are...
5	The factors of 18 are...

Example (2) Choose the correct answer

(1)	One of the factors of the number 15 is..................						
(A)	2	(B)	5	(C)	10	(D)	zero
(2)	One of the factors of the number 12 is..................						
(A)	2	(B)	5	(C)	10	(D)	zero
(3)	One of the factors of the number 30 is..................						
(A)	7	(B)	15	(C)	9	(D)	4
(4)	One of the factors of the number 24 is..................						
(A)	12	(B)	5	(C)	15	(D)	7

Example (3) Complete

1	Find the factors of the number 14 14 = ... x .... 14 = ... x .... Factors of the number 14 =......, ..., ..., ...	3	Find the factors of the number 35 35 = ... x .... 35 = ... x .... Factors of the number 35 =......, ..., ..., ...
2	Find the factors of the number 20 20 = ... x .... 20 = ... x .... Factors of the number 20 =......, ..., ..., ...	4	Find the factors of the number 16 16 = ... x .... 16 = ... x .... Factors of the number 16 =......, ..., ..., ...

Example (4) Complete	
1	The numbers 1, 2, 5, and 10 are factors of a number..... .
2	The numbers 1, 5, and 25 are factors of a number....... .
3	.....................is a factor of all numbers
4	The number of factors of the number 12 is equal to ...... factor
5	2 A factor of a number.......................................

Example (5) Complete an factor or not an factor			
1	3 .... for the number 21	6	10 .... for the number 45
2	2 .... for the number 28	7	9 .... for the number 36
3	6 .... for the number 54	8	4 .... for the number 25
4	21 ...... for the number 42	9	5 .... for the number 40
5	1 .... for the number 53	10	8 .... for the number 21

Example (6) Complete	
1	An even number greater than 30 and less than 50 that has a factor of 10 is......................
2	An even number between 20 and 30, and some of its factors are 1, 2, 7, 14 is ....
3	A number that has only one factor is...............
4	The number of pairs of factors of a number 12 equals .... pair
5	The pairs of factors of 18 are ....
6	The pairs of factors of 20 are ....
7	An even number between 2 and 16, and some of its factors are 1, 2, 7, 14 is ....

Exercises (1)

Example (1) Find the factors of the following numbers	
1	The factors of the number 24 are ....
2	The factors of the number 32 are ....
3	The factors of the number 45 are ....
4	The factors of the number 40 are ....

Example (2) Complete			
1	Find the factors of the number 17 .... x .... = 17 Factors of the number 17 .... , ...	2	Find the factors of the number 23 .... x .... = 23 Factors of the number 23 .... , ...

Example (3) Complete	
1	An odd number greater than 10 and less than 20 and one of its factors is 13 is..................
2	An odd number between 20 and 30, and some of its factors are 1 and 23.
3	A number that has only one factor is...............
4	The number of pairs of factors of the number 32 equals .... pair
5	The pairs of factors of 22 are..
6	The pairs of factors of 27 are..
7	An odd number between 2 and 16 and some of its factors are 1, 7 is ....

Prime and non-prime numbers (multifactorial)

Unit Six Lesson (2)

• prime numbers

- **The first number: it is a number greater than one, and it has only two factors (the one and the number itself).**
- **Such as: 2 ، 3 ، 5 ، 7 ، 11 ، 17 ، 19 ، 23 ، 29 ……..**
- **•All prime numbers are odd numbers except for 2 even numbers.**
- **The smallest even prime number is 2**
- **The smallest odd prime number is 3**
- **The one is not prime because it has only one factor.**

•A non-primary number: it is a number greater than or equal to one and has more than two factors.

2	3	5	7	11
13	17	19	23	29
31	37	41	43	47
53	59	61	67	71
73	79	83	89	97

Example (1) Find the factors of the following numbers, then determine whether it is a prime number or not

1	Find the factors of the number 14 ………… x ………… = 14 ………… x ………… = 14 Factors of the number 14 ……. ,……. ,……. ,……. the number 14 is ……….	2	Find the factors of the number 5 ………… = 5x………… Factors of the number 5 ……. ,……. ,……. ,……. the number 5 is ……….

3	Find the factors of the number 25 .... x .... =25 .... x .... =25 Factors of the number 25 .... ,....... ,....... ,....... the number 25 is	4	Find the factors of the number 31 .... x .... = 31 Factors of the number 31 .... ,....... ,....... ,....... the number 31 is ....

Example (2) Complete by writing a prime or non-prime number	
1	The factors of the number 9 are .... and therefore the number..........
2	The factors of the number 3 are .... and therefore the number..........
3	The factors of the number 16 are .... and therefore the number..........
4	The factors of the number 31 are .... and therefore the number..........
5	The factors of the number 30 are .... and therefore the number..........

Example (3) Complete	
1	The common factor of all numbers is ....
2	All prime numbers are odd numbers except.......................
3	The smallest prime number is...
4	The factors of the number 3 are.........................
5	A number that has only two factors is called a number.
6	The first number preceding the number 17 is................
7	The first number after the number 20 is................
8	A prime number between the numbers 30 and 35 is.............

Exercises (2)

Example (1) Find the factors of the following numbers, then determine whether it is a prime number or not			
1	Find the factors of the number 27 .... x .... =27 .... x .... =27 Factors of the number 27 .... ,....... ,....... ,....... the number 27 is	2	Find the factors of the number 19 .... x .... =19 Factors of the number 19 .... ,....... ,....... ,....... the number 19 is ....

Example (2) Complete by writing a prime or non-prime number	
1	The factors of the number 37 are .... and therefore the number..........
2	The factors of the number 5 are .... and therefore the number..........
3	The factors of the number 14 are .... and therefore the number..........
4	The factors of the number 32 are .... and therefore the number..........

Example (3) Complete	
1	The first number after the number 17 is................
2	All prime numbers are odd numbers except ....
3	The smallest odd prime number is ....
4	The factors of the number 9 are...
5	A number that has only two factors is called a number...........
6	The first number preceding the number 37 is................
7	The common factor of all numbers is ....

greatest common factor

Unit Six
lesson (3)

• Method of finding the common factor

• We find the factors of each of the numbers 14 and 21

The factors of 21 are 1, 3, 7, and 21

The factors of 14 are 1, 2, 7, and 14

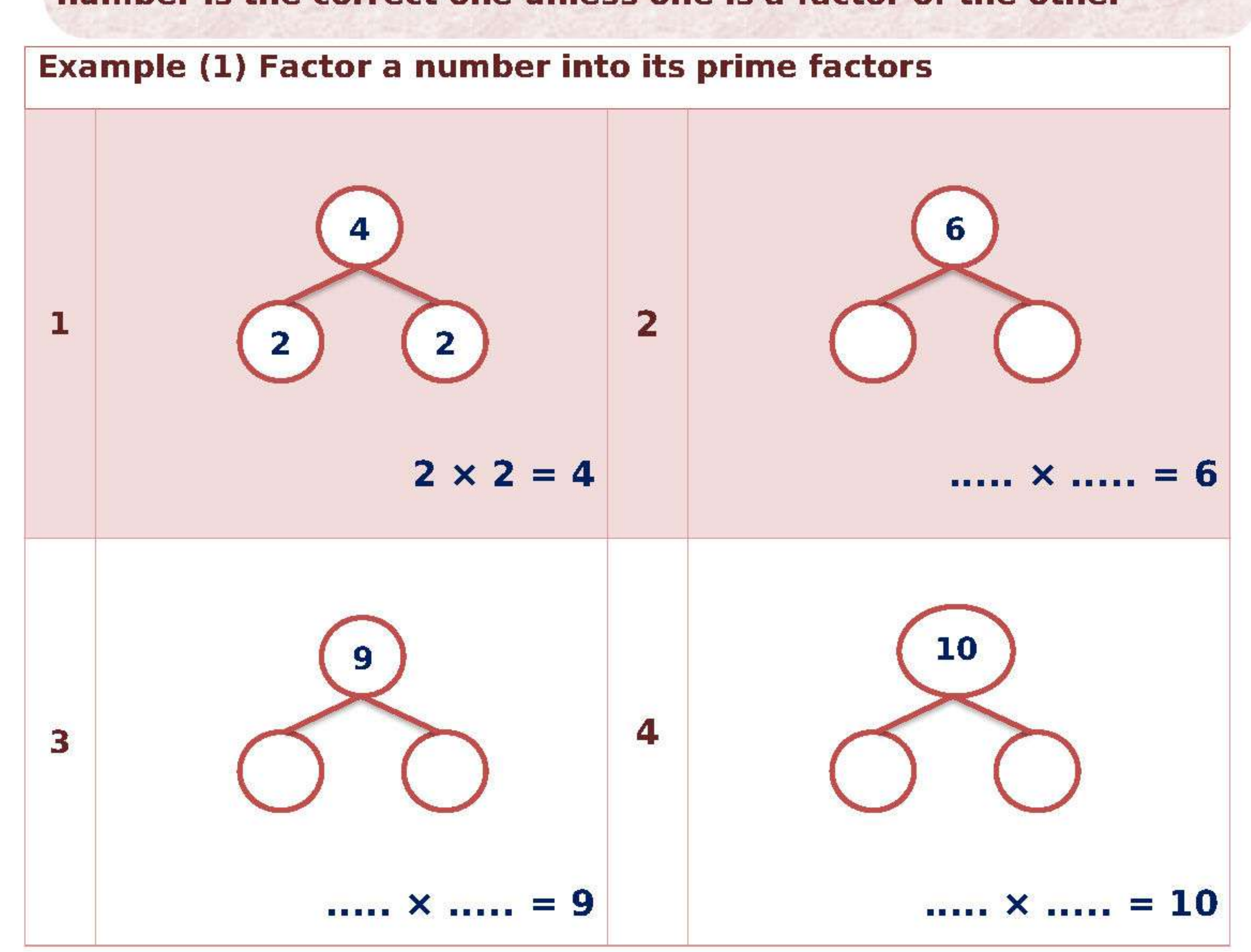
• We determine the common factors of the numbers
14 and 21 are 1 and 7

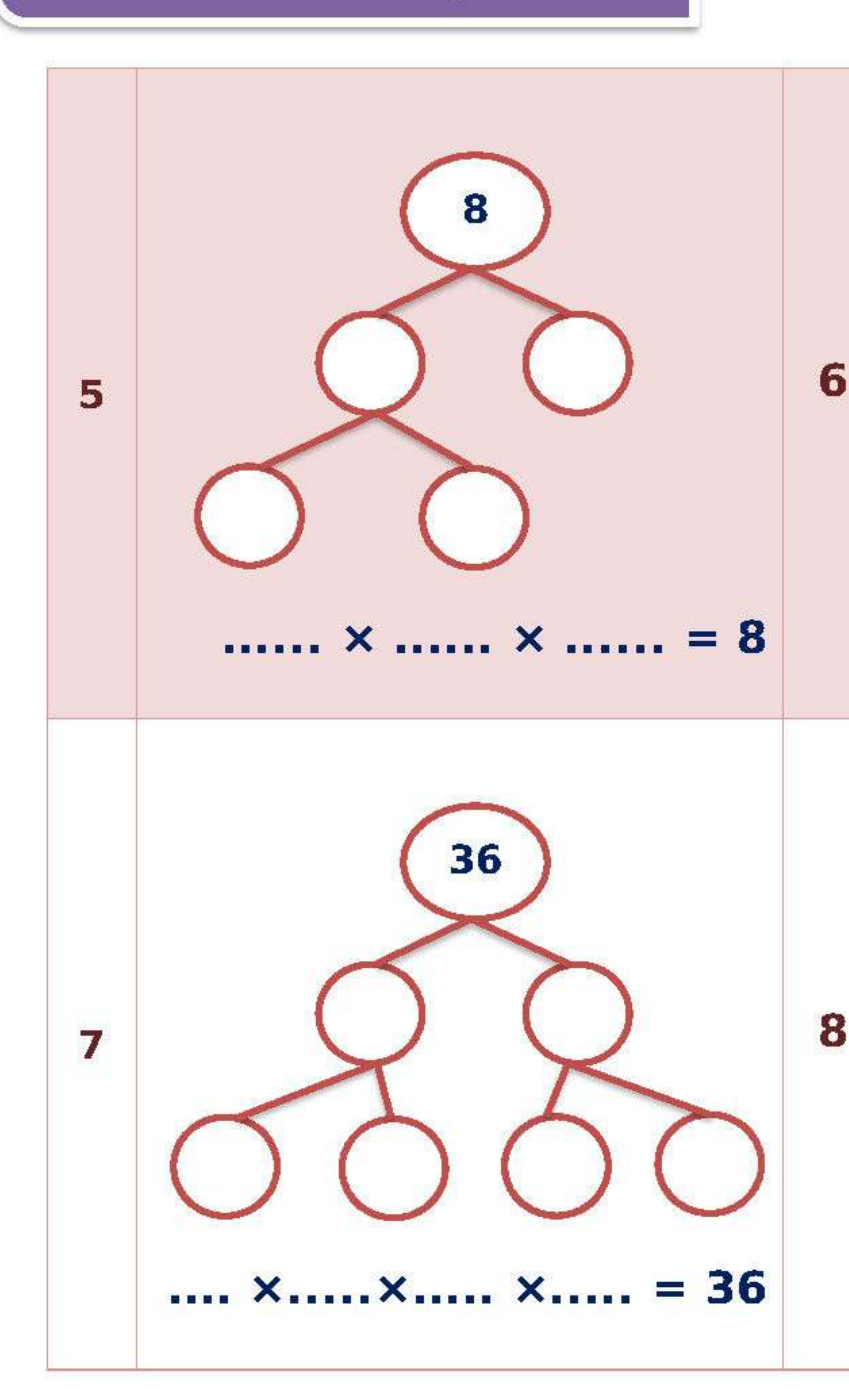
• We determine the greatest common factor (G C F) 14 and 21 is 7

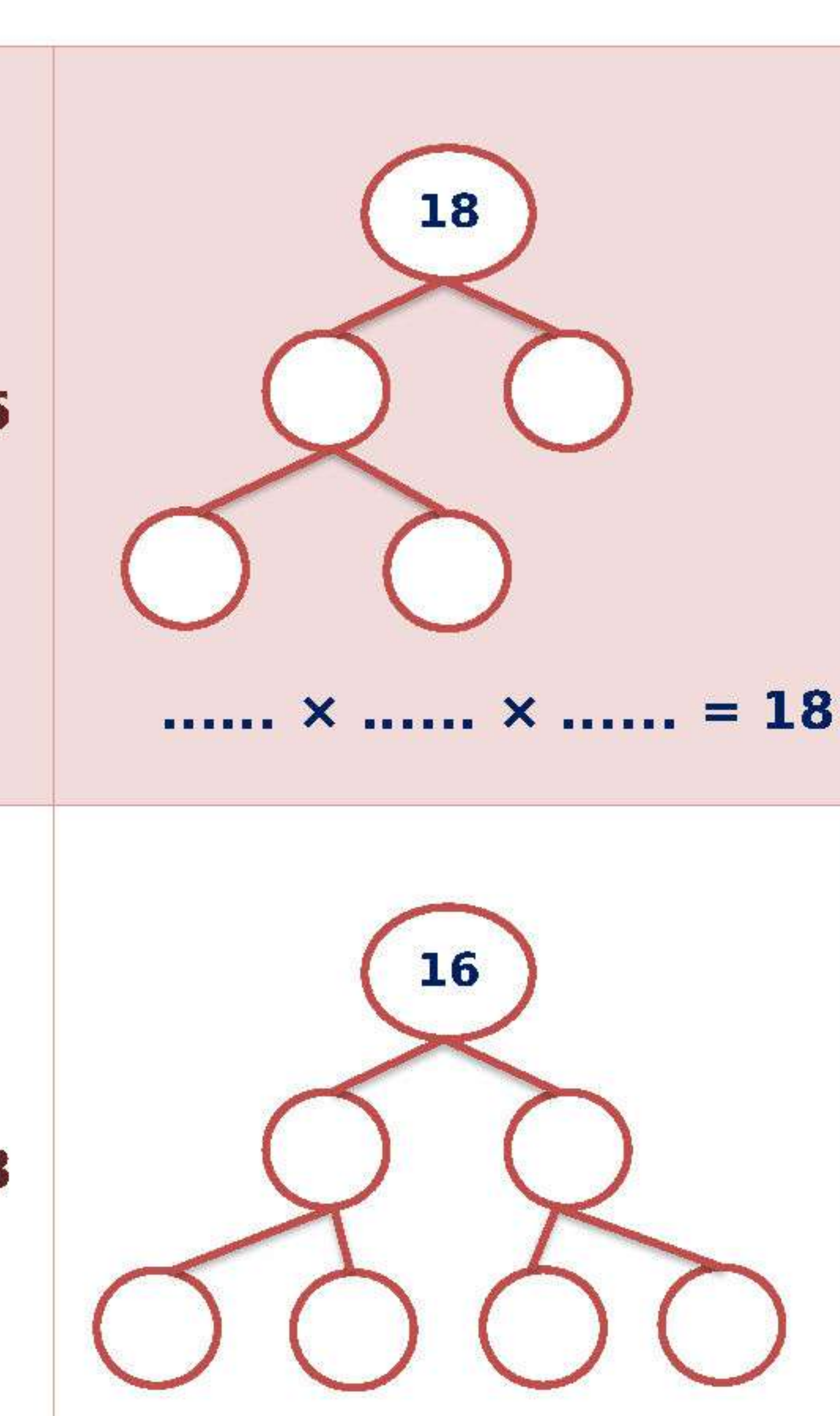
• The common factor for all numbers is the integer one

• The common factor between a prime number and a non-prime number is the correct one unless one is a factor of the other

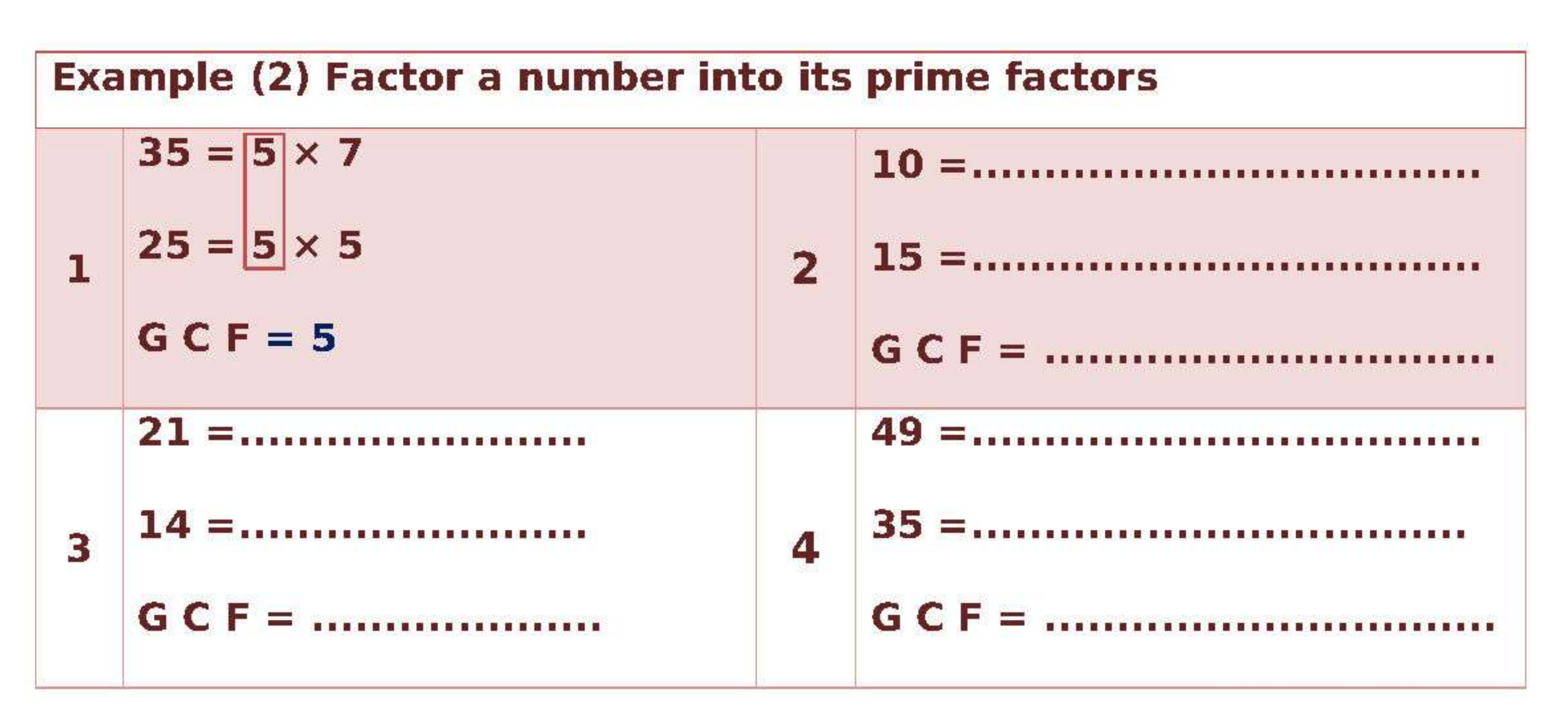
Example (1) Factor a number into its prime factors







5	...... × ...... × ...... = 8	6	...... × ...... × ...... = 18
7	.... ×.....×..... ×..... = 36	8	.... ×.....×..... ×..... = 16



Example (2) Factor a number into its prime factors

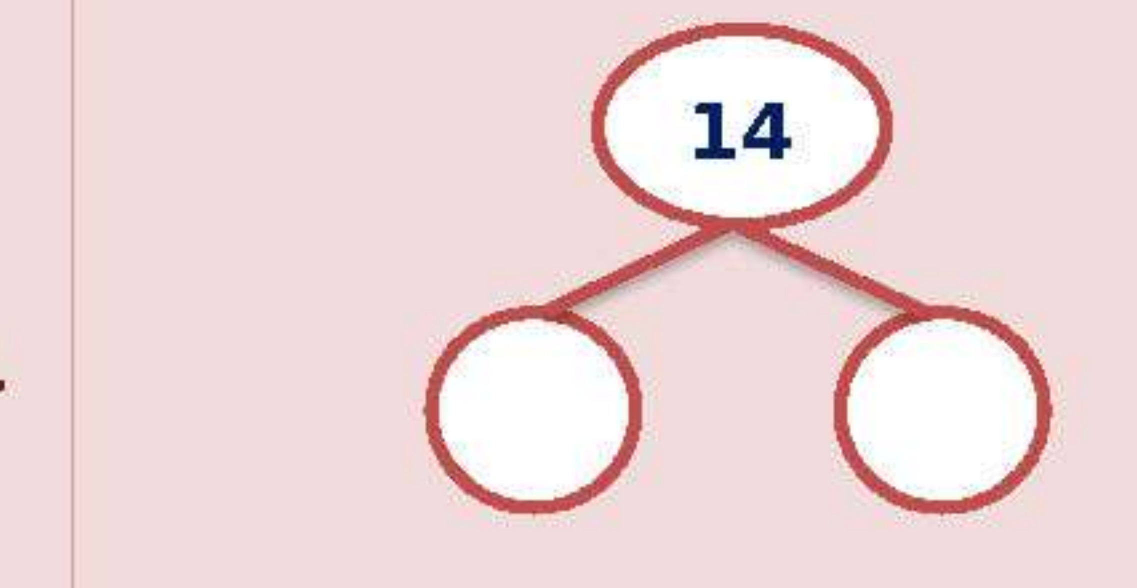
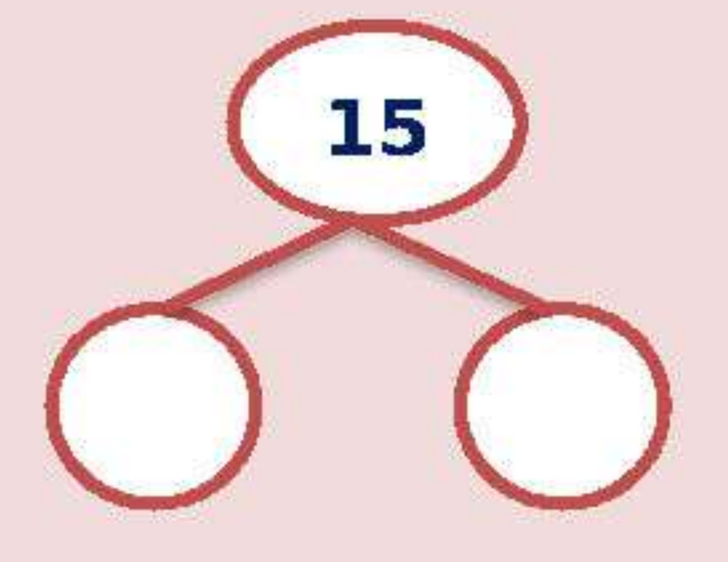
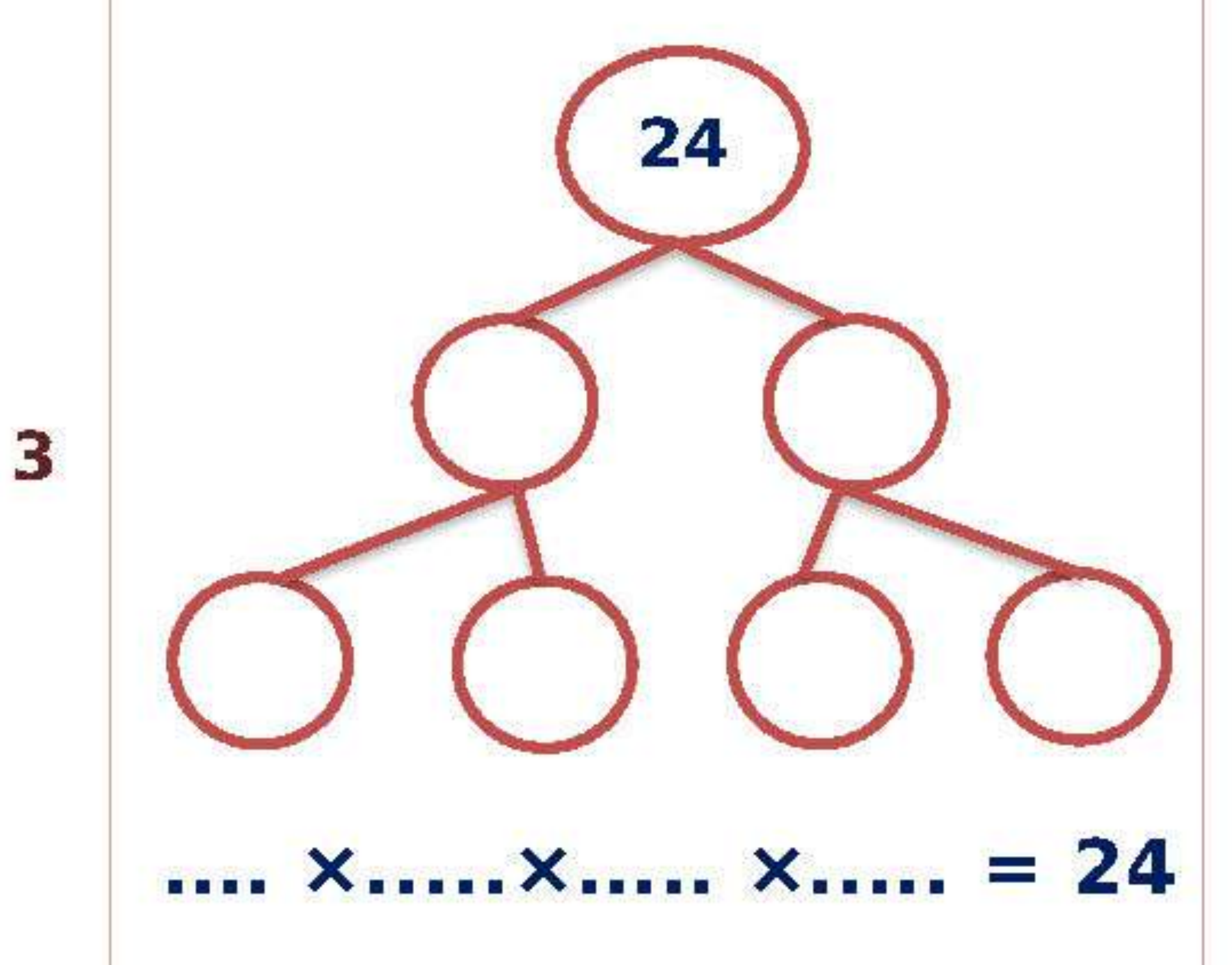
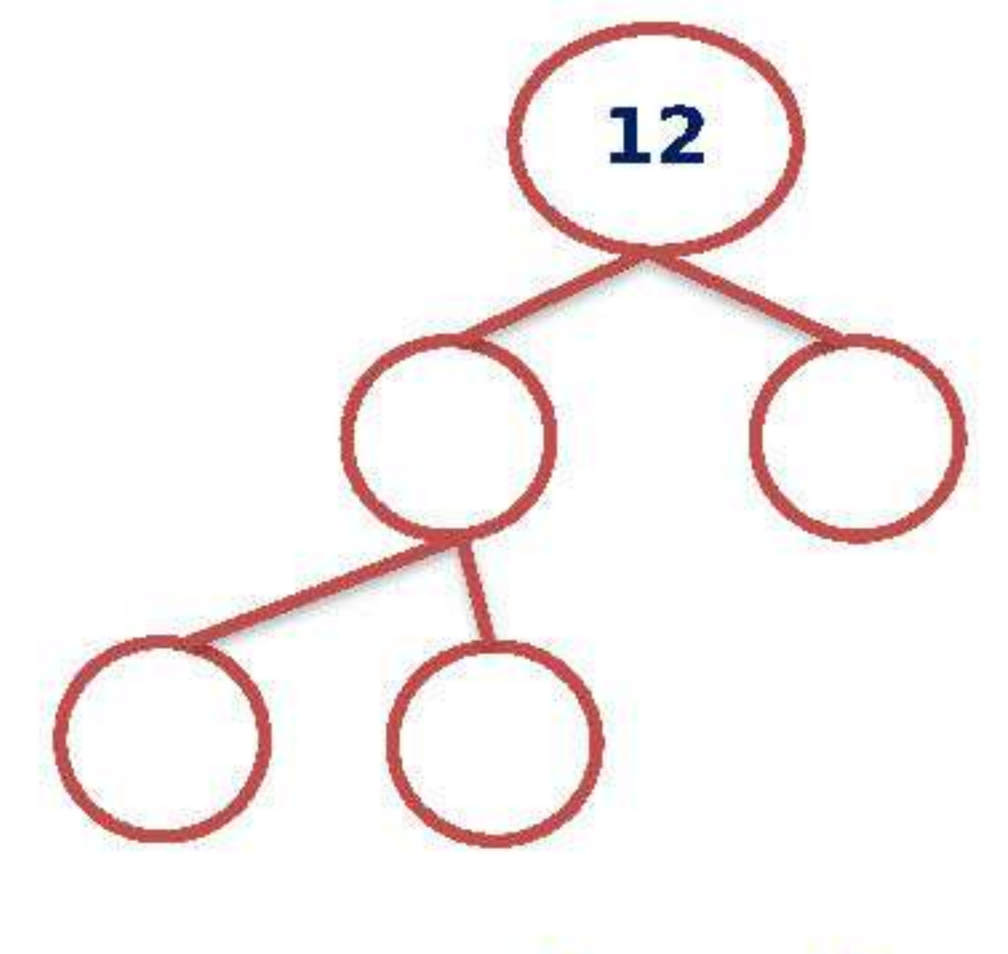
1	35 = 5 × 7 25 = 5 × 5 G C F = 5	2	10 =................................. 15 =................................. G C F = ...
3	21 =........................ 14 =........................ G C F = ...	4	49 =................................. 35 =................................ G C F = ...

Example (3) Write down the factors of each number, then write the greatest common factor (G C F)	
1	The factors of 22 are.................... .... The factors of 44 are.................... .... The greatest common factor is................
2	The factors of 13 are.................... .... The factors of 39 are.................... .... The greatest common factor is................
3	The factors of the number 25 are .... The factors of 55 are.................... .... The greatest common factor is................
4	The factors of 6 are................ .... The factors of 18 are.................... .... The greatest common factor is................

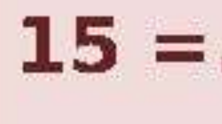
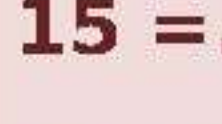
Example (4) Complete	
1	Muhammad wanted to divide 14 pens and 21 notebooks into groups so that each group contains the same number of tools. What is the largest number of groups that can be formed for each type of tool so that each group has the same number. And how many pens are in each group? What is the number of chairs in each group? 14 = ... 21 = ... Number of groups (G C F) = ... Number of pens in each group = ... Number of notebooks in each group = ...

Exercises (3)

Example (1) Factor a number into its prime factors

1	 ..... × ..... = 14	2	 ..... × ..... = 15
3	 .... ×.....×..... ×..... = 24	4	 .....×..... ×..... = 12

Example (2) Factor a number into its prime factors

1	16 =............................... 8 =.................................. G C F = ...	2	20 =.................................      15 =.................................  G C F = ...
3	42 =....................... 32 =....................... G C F = ...	4	21 =.................................    28 =.................................    G C F = ...

Example (3) Write down the factors of each number, then write the greatest common factor (G C F)	
1	The factors of the number 15 are .... The factors of 30 are.................... .... The greatest common factor is................
2	The factors of the number 40 are .... The factors of the number 25 are .... The greatest common factor is................
3	The factors of 36 are.................... .... The factors of the number 12 are .... The greatest common factor is................
4	The factors of the number 8 are .... The factors of the number 14 are... The greatest common factor is................

Example (4) Complete	
1	Muhammad wanted to divide 25 pens and 35 notebooks into groups so that each group contains the same number of tools. What is the largest number of groups that can be formed for each type of tool so that each group has the same number. And how many pens are in each group? What is the number of chairs in each group? 25 = ... 35 = ... Number of groups (G C F) = ... Number of pens in each group = ... Number of notebooks in each group = ...

Unit Six Lesson (4 - 5)

Identifying multiples of whole Numbers Common multiples

Multiples of numbers are the products of multiplying a number by each of the numbers (0 ، 1 ، 2 ، 3 ، 4 ، ....)

- Example multiples of 2 are: 0, 2, 4, 6 ....
- Note: If we multiply any number by 3, the result will be a multiple of 3 and so on.
- **Common multiples**
- Zero is a common multiple of all numbers except zero

Example (1) Write down the factors of each number, then write the Least Common Multiple (LCM)

1

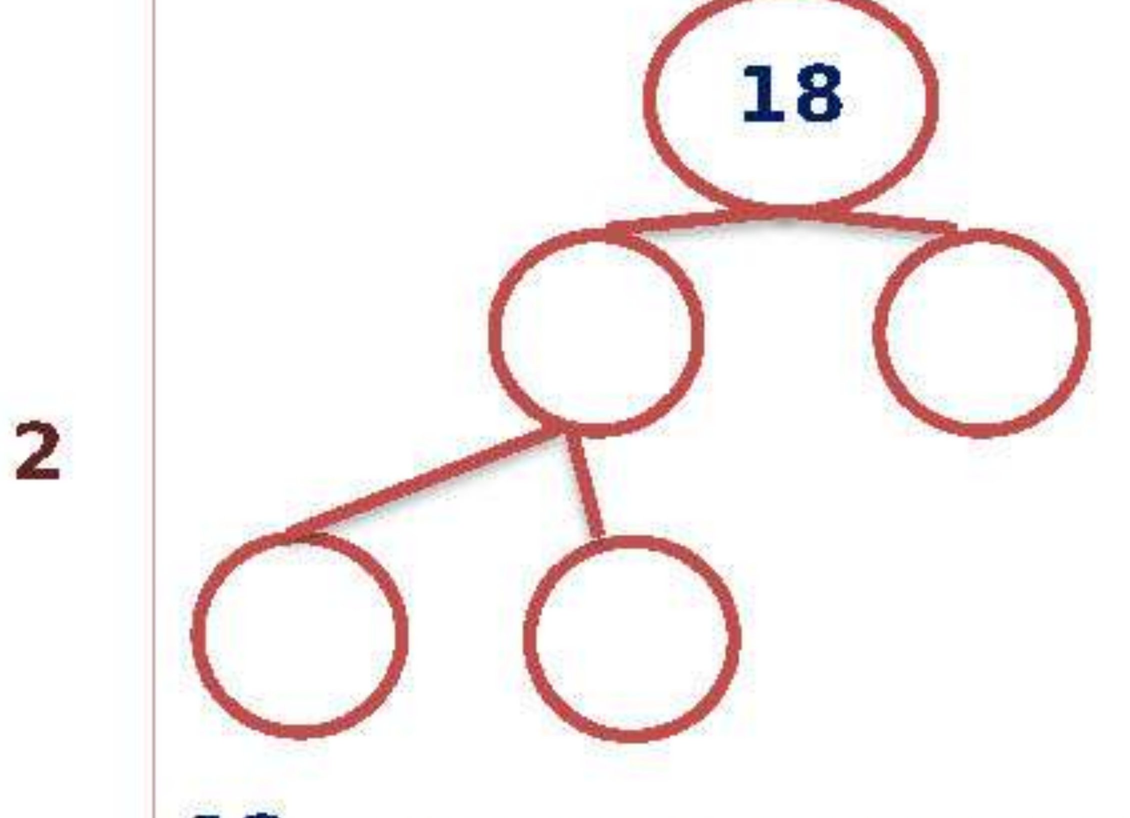
- Find (LCM) for the two numbers (20, 30)



20 = ...× ....× ....
30 = ...× ....× .... × ....
LCM = ...× .....× ..... × ..... = ...

2

- Find (LCM) for the two numbers (12, 20)



12



12 = ...× ....× ....
18 = ...× ....× ....
LCM = ...× .....× ..... × ..... = ...

Example (1) Complete	
1	Multiples of 5 are ....
2	Multiples of 3 are ....
3	Multiples of 10 are ....
4	What is the common multiple of 5 and 8? The multiples of 5 are........... .... Multiples of 8 are .... (30 ، 40 ، 20)
5	Which of the following is not a common multiple of 9 and 6? Multiples of 9 are............... .... Multiples of 6 are .... (36 ، 27 ، 18)
6	Multiples of 3 that are less than 15 are ....
7	14 is a common multiple of both..
8	21 is a common multiple of both...
9	An even number that is a common multiple of 2 , 5 is greater than 35 and less than 42 is...............
10	5 are common multiples of 3 and 4 The multiples of 3 are .... The multiples of 4 are .... Common complications are ....
11	5 are common multiples of 10 and 5 The multiples of 10 are .... The multiples of 5 are .... Common complications are ....

Example (3) Complete by writing a multiple or not			
1	2 .... for the number 12	2	27 .... for the number 5
3	40 .... for the number 20	4	9 .... for the number 19

Exercises (4)

Example (1) Complete	
1	Multiples of 4 are ....
2	Multiples of 7 are ....
3	Multiples of 20 are ....
4	What is the common multiple of 3 and 9? The multiples of 3 are........... .... Multiples of 9 are .... (9 ، 40 ، 20)
5	Which of the following is not a common multiple of 10 and 15? Multiples of 10 are.............. .... Multiples of 15 are .... (30 ، 27 ، 60)
6	Multiples of 7 that are less than 15 are ....
7	15 is a common multiple of both..
8	35 is a common multiple of both.......................................
9	An even number that is a common multiple of 4 , 3 is greater than 35 and less than 42 is...............
10	5 are common multiples of 7 and 3 The multiples of 3 are .... The multiples of 4 are .... Common complications are ....
11	5 are common multiples of 2 and 5 The multiples of 3 are .... The multiples of 4 are .... Common complications are ....

Example (2) Complete by writing a multiplier or factor			
1	2 .... for the number 24	2	45 .... for the number 5
3	10 ...... for the number 40	4	9 .... for the number 27

Relationships between factors and multiples

Unit Six
Lesson (6)

- Explain the relationship between the numbers 3, 5 and 15
- The number 15 is a common multiple of the numbers 3 and 5
- The numbers 3 and 5 are factors of 15
- Any number that is a multiple of any of its factors

Example (1) Infer the relationship between the numbers	
1	24 ، 8 ، 3 ....
2	30 ، 6 ، 5 ....
3	30 ، 5 ، 10 ، 3 ....
4	Write a number that has only 3 factors ..... .
5	Write 3 multiples of 5 ....
6	Write 3 factors of the number 20................. .
7	The number 24 is one of the factors of the number...............
8	The number 6 is a factor of the number......................
9	The common multiple of all numbers is ....

Example (2) Complete by writing a multiplier or factor			
1	5 .... for the number 15	2	4 .... for the number 16
3	40 ...... for the number 20	4	81 ...... for the number 9

Exercises (5)

Example (1) Infer the relationship between the numbers	
1	21 ، 7 ، 3 ....
2	35 ، 7 ، 5 ....
3	16 ، 8 ، 4 ، 2 ....
4	Write a number that has only 2 factors ..... .
5	Write 3 multiples of 6................. .
6	Write 3 factors of the number 30................. .
7	The number 20 is a factor of the number..............................
8	The number 6 is a factor of the number...............................
9	The common multiple of all numbers is ....
10	Write a number that contains only 4 factors ....
11	The common factor of all numbers is ....

Example (2) Complete by writing a multiplier or factor			
1	2 .... for the number 16	2	6 .... for the number 36
3	40 ...... for the number 80	4	27 ...... for the number 3
5	7 .... for the number 35	6	4 .... for the number 24
7	90 ...... for the number 10	8	15 ...... for the number 3

Exam (unit six)

Example (1) Choose the correct answer

(1)	The only even prime number................................						
(A)	1	(B)	2	(C)	3	(D)	4
(2)	(G C F) for the number 8, 12 is..................						
(A)	2	(B)	3	(C)	12	(د)	3
(3)	The number .... is a factor of the number 63						
(A)	2	(B)	5	(C)	7	(D)	11
(4)	Which of the following numbers is a prime number?						
(A)	1	(B)	50	(C)	14	(D)	11
(5)	Which of the following is a multiple of 9 ?						
(A)	30	(B)	50	(C)	18	(D)	6
(6)	The common factor for all numbers is						
(A)	0	(B)	1	(C)	2	(D)	3
(7)	A common multiple of 6 and 8 is the number.....................						
(A)	8	(B)	6	(C)	48	(D)	40

Example (2): - Complete

1	The prime number immediately following the number 11 is ....
2	The common factors of the numbers 4 and 16 are:....... , ... ,....
3	The prime number has .... factor
4	Multiples of 4 between 20 and 30 are..................................
5	If 35 = 5 × 7, then the number........... is a multiple of the two numbers .... , ...
6	The common multiple of 6 and 9 is...........................
7	The numbers 20, 25, and 30 are multiples of a number...............
8	The number .... is the greatest common factor (GCF) of the numbers 7 and 14

Example (3) Choose the correct answer							
(1)	The numbers 1, 2, 5, and 10 are factors of a number....................						
(A)	5	(B)	25	(C)	10	(D)	2
(2)	A prime number whose sum of factors is 8 is...........................						
(A)	7	(B)	5	(C)	13	(D)	11
(3)	Which of the following pairs has the same (GCF) for the numbers 12 and 42.......... ?						
(A)	9 ، 6	(B)	27 ، 8	(C)	60 ، 18	(D)	48 ، 36
(4)	Which of the following is a prime number...						
(A)	5	(B)	6	(C)	10	(D)	12
(5)	A factor of 63 is the number................						
(A)	6	(B)	7	(C)	8	(D)	10
(6)	Which of the following statements defines the relationship between the numbers 5 and 25?						
(A)	is a 5 multiple of 25	(B)	is a 5 factor of 25	(C)	factors 25 out of 5	(D)	is 5 5 times 25
(7)	The common multiple of all numbers is..............						
(A)	0	(B)	1	(C)	2	(D)	3

Example (4): - Complete as required	
1	Find the common factors of the numbers 25 and 45 ....
2	Find the greatest common factor (GCF) of the numbers 12 and 30 ....
3	Write 3 common multiples of 2 and 4 ....
4	Deduce the relationship between the following numbers 24 ، 8 ، 2 ....

Multiplication of the area models and Distribution property

Unit Seven Lesson (2-1)

• Multiplication of the area models

• $15 \times 3 = 45$

	10	5
3	$10\times 3 = 30$	$5\times 3 = 15$

30 + 15 = 45

• Distribution property

• $15 \times 3 = 3 \times (10 + 5)$

$= (3 \times 10) + (3 \times 5)$

$= 30 + 15$

$= 45$

Example (1)

1 $95 \times 4 =$..........................

....

... [|]

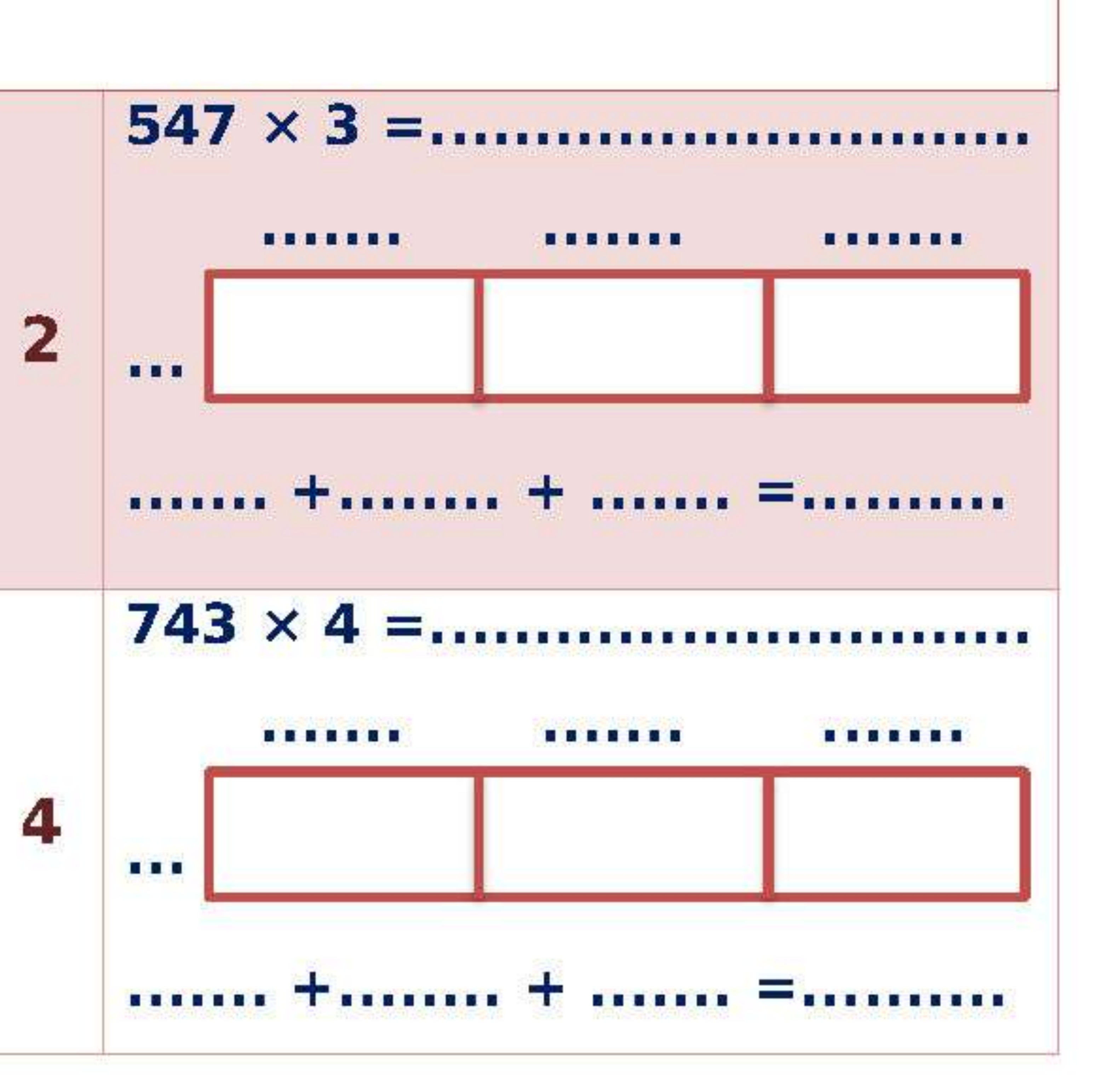
.... + ... = ...

2 $547 \times 3 =$..........................

....

... [| |]

.... +....... + ... =.........

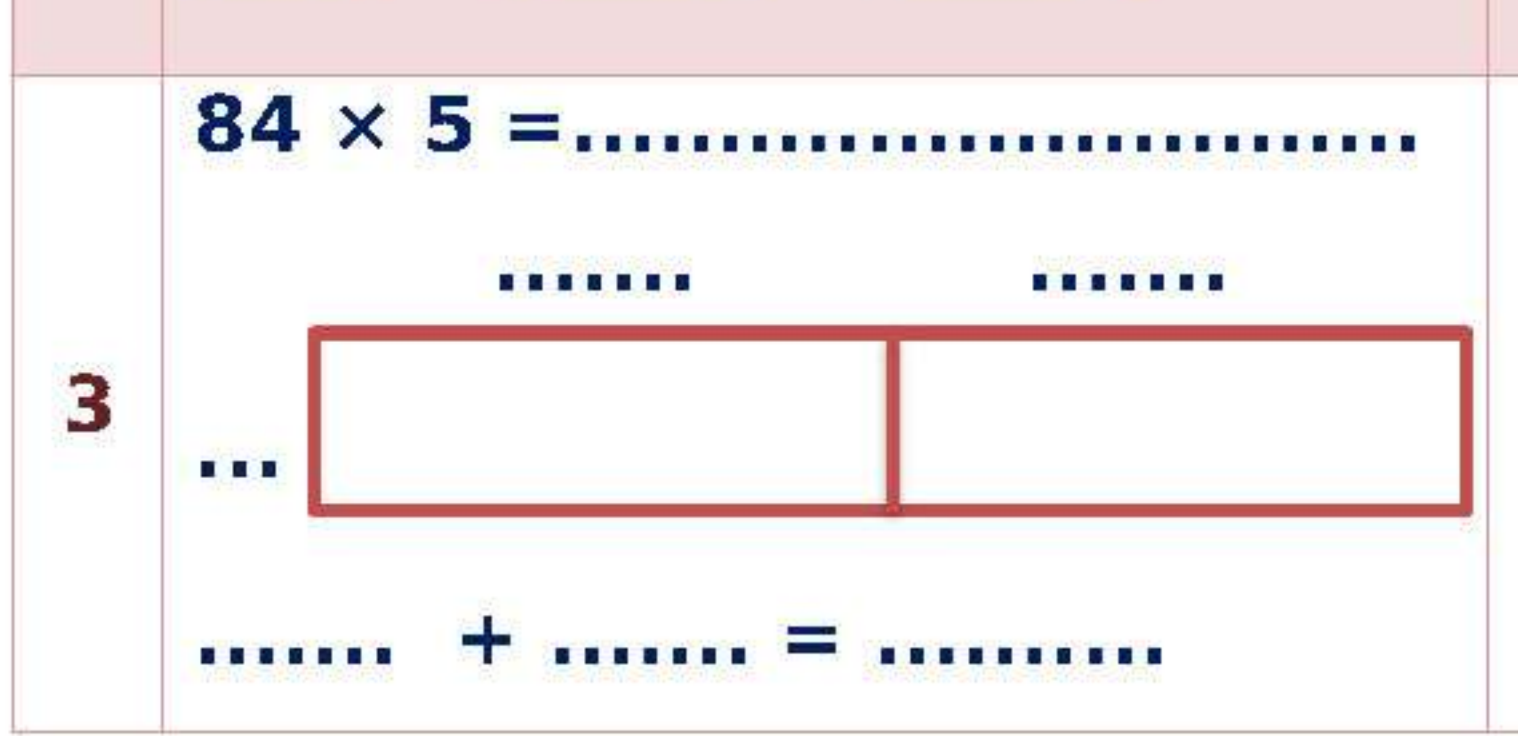


3 $84 \times 5 =$..........................

....

... [|]

.... + ... = ...



4 $743 \times 4 =$..........................

....

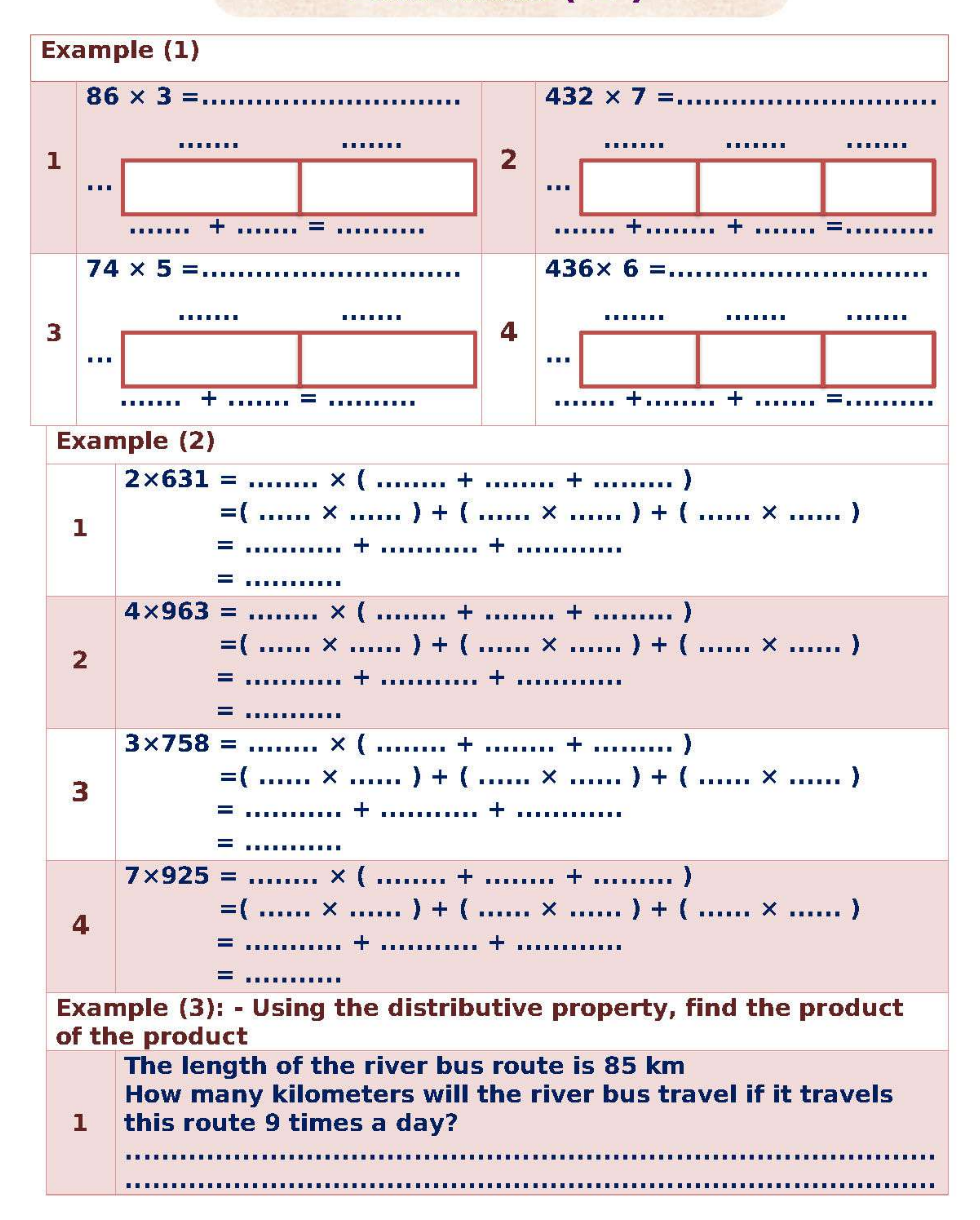
... [| |]

.... +....... + ... =.........

Example (2)	
1	2×451 = …….. × (…….. + …….. + ………) =(…… × ……) + (…… × ……) + (…… × ……) = ………. + ………. + ………. = ……….
2	4×784 = …….. × (…….. + …….. + ………) =(…… × ……) + (…… × ……) + (…… × ……) = ………. + ………. + ………. = ……….
3	3×463 = …….. × (…….. + …….. + ………) =(…… × ……) + (…… × ……) + (…… × ……) = ………. + ………. + ………. = ……….
4	7×836 = …….. × (…….. + …….. + ………) =(…… × ……) + (…… × ……) + (…… × ……) = ………. + ………. + ………. = ……….
5	8×426 = …….. × (…….. + …….. + ………) =(…… × ……) + (…… × ……) + (…… × ……) = ………. + ………. + ………. = ……….

Example (3): - Using the distributive property, find the product of the product	
1	Each river bus can accommodate 22 passengers at a time What is the maximum number of passengers that can be carried on 5 flights? …………………………………………………………………………… ……………………………………………………………………………

Exercises (1)



Example (1)

1	86 × 3 =........................ .... [ ] [ ] .... + ... = ...	2	432 × 7 =........................ .... [ ] [ ] [ ] .... +....... + ... =.........
3	74 × 5 =........................ .... [ ] [ ] .... + ... = ...	4	436× 6 =........................ .... [ ] [ ] [ ] .... +....... + ... =.........

Example (2)

1	2×631 = ... × (........ + ... + ...) =(...... × ......) + (...... × ......) + (...... × ......) = ... + ... + ... = ...
2	4×963 = ... × (........ + ... + ...) =(...... × ......) + (...... × ......) + (...... × ......) = ... + ... + ... = ...
3	3×758 = ... × (........ + ... + ...) =(...... × ......) + (...... × ......) + (...... × ......) = ... + ... + ... = ...
4	7×925 = ... × (........ + ... + ...) =(...... × ......) + (...... × ......) + (...... × ......) = ... + ... + ... = ...

Example (3): - Using the distributive property, find the product of the product

1	The length of the river bus route is 85 km How many kilometers will the river bus travel if it travels this route 9 times a day? ....

Standard multiplication algorithm and partial multiplication

Unit Seven
Lesson (3 -4)

• partial multiplication

```
            457
          ×   5
  ---------------------
  2,000 = ( 400 × 5 )
    250 = (  50 × 5 )
     35 = (   7 × 5 )
  ---------------------
  3,285 =
```

• Standard multiplication algorithm

```
  1 2 3              1
  1,456              45
     ×  5             × 3
  -------           -----
  7,280              135
```

Example (1) Complete

1	876 × 4 ………… + ………… + ………… …………	2	548 × 8 ………… + ………… + ………… …………	3	156 × 7 ………… + ………… + ………… …………	4	378 × 5 ………… + ………… + ………… …………

1	5,931 × 4 = ...	2	4,784 × 3 = ...	3	7,360 × 5 = ...	4	8,158 × 6 = ...

Example (2) Complete

1	4,457 × 5 =........................	2	625 × 3 =...........................
3	1,605 × 6 =........................	4	725 × 7 =...........................

Example (3) Use estimation to determine the product of the multiplication, then find the actual product

1	43 × 4 Estimate= .... solution :	2	152 × 3 Estimate= .... solution :	3	746 × 5 Estimate= .... solution :	4	1,415 × 2 Estimate= .... solution : ....

Example (4): - Using the distributive property, find the product of the product

1	If a kilogram of apples costs 30 pounds, how much does 5 kilograms cost? ....
2	5people participated in a trip, each person paid 125 pounds. Find out what they paid. ....
3	A lion eats 15 kg of meat per hour, how many kg does he eat in 5 hours ....
4	6 people participated in an exhibition and each of them won $145. What amount did they all win? ....

Exercises (2)

Example (1)

1	235 × 6 .... + ... + ...	2	526 × 7 .... + ... + ...	3	626 × 4 .... + ... + ...	4	572 × 9 .... + ... + ...
5	461 × 8 .... + ... + ...	6	628 × 4 .... + ... + ...	7	826 × 5 .... + ... + ...	8	953 × 7 .... + ... + ...
1	3,617 4 ×	2	7,268 2 ×	3	5,602 5 ×	4	9,235 3 × ....
5	6,671 6 ×	6	4,346 8 ×	7	8,378 9 ×	8	5,124 7 × ....

Example (2)

1	6,261 × 5 =........................	2	479 × 7 =...........................
3	3,280 × 6 =........................	4	166 × 8 =...........................
5	3,367 × 7 =........................	6	235 × 9 =...........................
7	5,267 × 8 =........................	8	835 × 4 =...........................

Example (3) Use estimation to determine the product of the multiplication, then find the actual product

1	67 × 4 Estimate= .... solution :	2	748 × 3 Estimate= .... solution :	3	836 × 5 Estimate= .... solution :	4	8,357 × 2 Estimate= .... solution : ....

Example (4)

1	If a kilogram of apples costs 45 pounds, how much does 6 kilograms cost? ....
2	8 people participated in a trip, each person paid 174 pounds. Find out what they paid. ....
3	A lion eats 24 kg of meat per hour, how many kg does he eat in 7 hours ....
4	9 people participated in an exhibition and each of them won $261. What amount did they all win? ....

Multiplication by a two-digit number In multiples of 10

Unit Seven lesson (5)

•Multiplication by distribution and the area of the rectangle model

- **Multiplication using the distributive property**
- $10 \times 32 = (10) \times (30 + 2)$

  $= (10 \times 30) + (10 \times 2)$

  $= 300 + 20$

  $= 320$
- **Multiplication using the area of the rectangle model**
- $20 \times 35 = 45$

	30	5
20	20 × 30 = 600	20 × 5 = 100

600 + 100 = 700

•Standard multiplication algorithm and partial multiplication

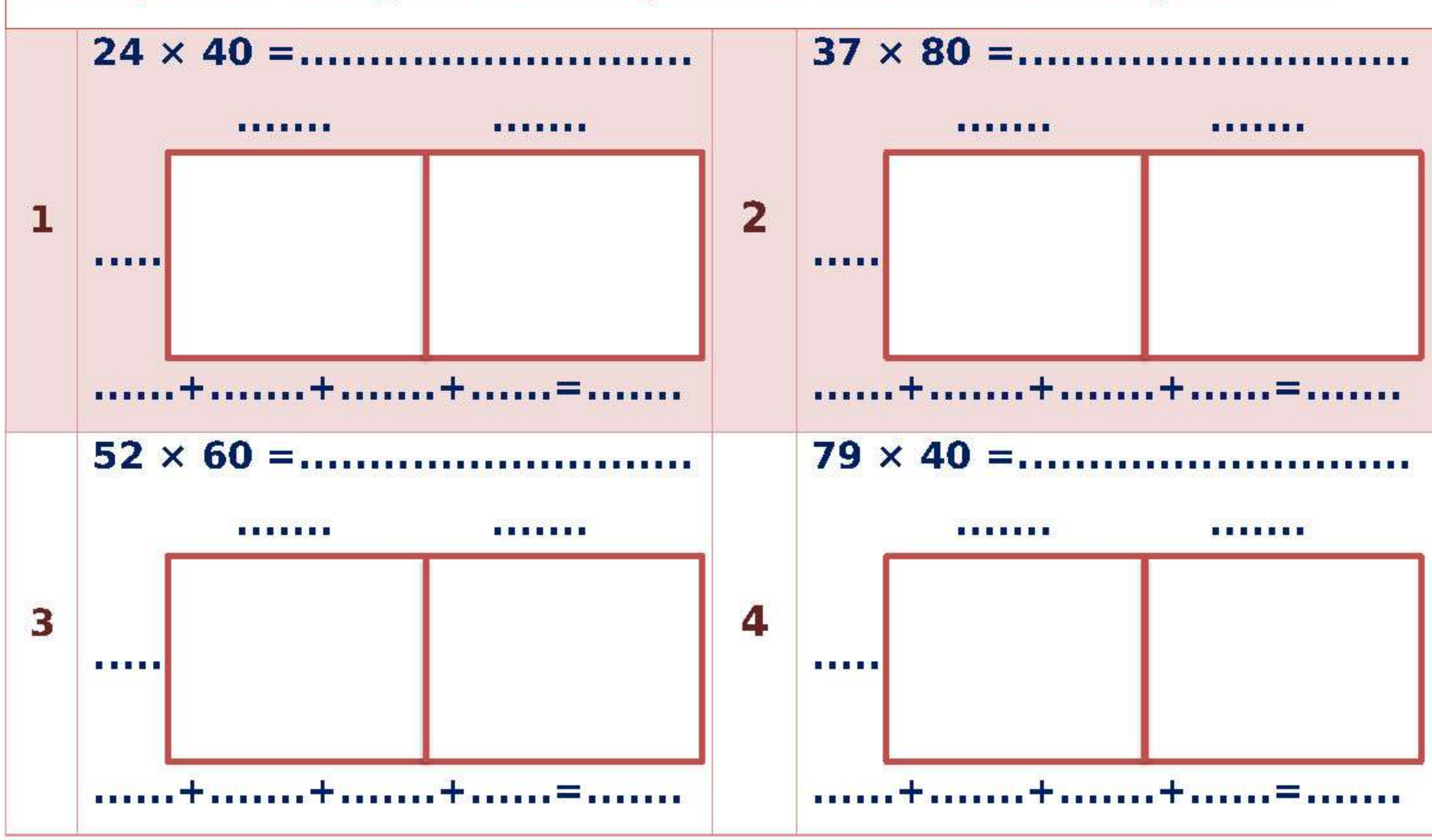
fractional multiplication

	45
	20 ×
(5 × 20)	100
(40 × 20)	800 +
	900

Standard multiplication

57
20×
1,140

Example (1) Using the rectangle area model, find the product



Example (2): - Find the result by rounding to the nearest 10	
1	14 × 31 = 10 × 30 =300
2	17 × 64 = ... × .... =..........
3	37 × 85 = ... × .... =..........
4	41 × 53 = ... × .... =..........

Example (3): - Find the product	
1	43 × 20 =(...... + ...) × .... =(..... × ......) + (..... × .....) = ... + ... = ...
2	60 × 82 =.........× (...... + ...) =(..... × ......) + (..... × .....) = ... + ... = ...

Example (4) Find the product of the multiplication

1	94 × 30 .... + ...	2	83 × 60 .... + ...
3	45 × 20 .... + ...	4	65 × 70 .... + ...

Example (5) Find the product

1	53 × 90	2	48 × 70	3	39 × 80	4	145 × 20 ....

Example (6): - Complete

1	If the price of a kilogram of apples is 25 pounds. How much is 30 kg ....

2	35people participated in the trip, each person paid 80 pounds. Find what they paid. ....
3	An ant travels 78 meters per hour, find the distance it travels in 50 hours. ....
4	A lion eats 41 kilograms of meat per day, how many kilograms does he eat in 60 days? ....
5	Hani paints pictures and gets paid 56 pounds for one painting. What is the total amount that Hani gets for 40 paintings? ....
6	Roa reads 24 pages a day, how many pages do you read in 30 days? ....

Exercises (3)

Example (1) Using the rectangle area model, find the product

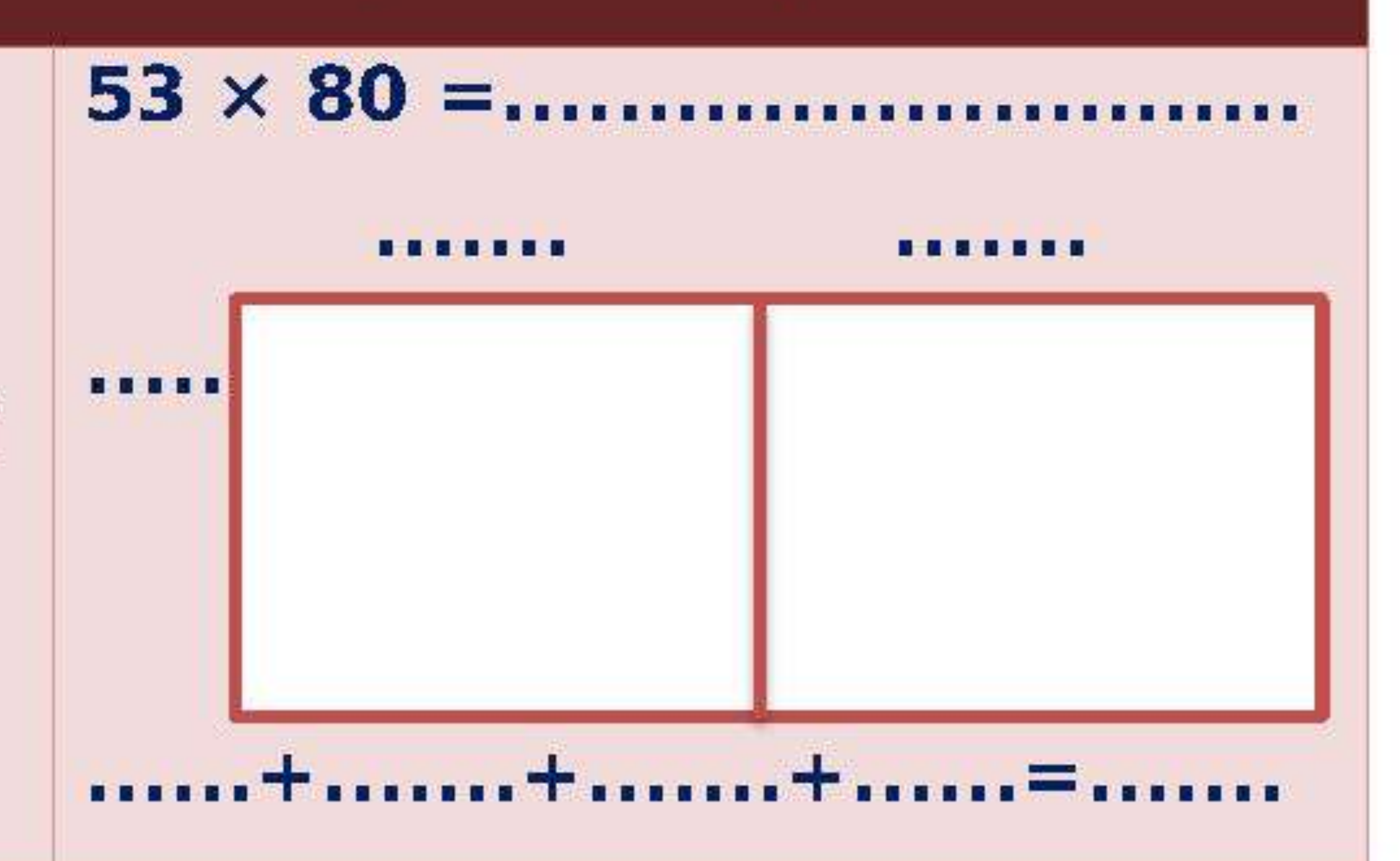
1. 71×40 =........................

....

.....

......+.......+.......+......=.......

2. 53×80 =........................



....

.....

......+.......+.......+......=.......

Example (2): - Find the product

1. 84×50 =(...... + ...) × ....
=(..... × ......) + (..... × .....)
= .... + ...
= ....

2. 60×62 = ... × (...... + ...)
=(..... × ......) + (..... × .....)
= .... + ...
= ....

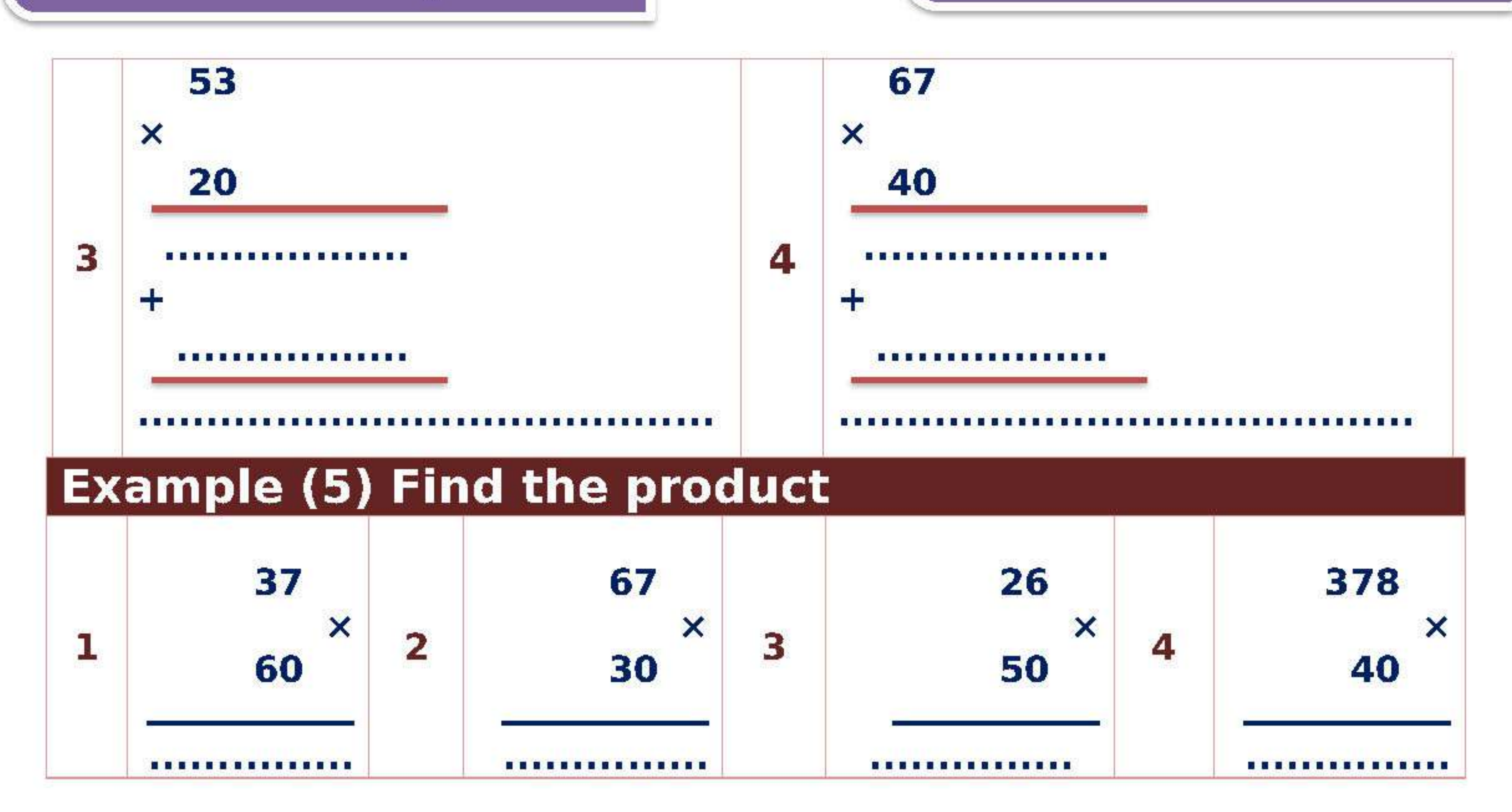
Example (3): - Find the result by rounding to the nearest 10

1	63×36 = ... × .... =..........
2	72×37 = ... × .... =..........
3	53×83 = ... × .... =..........
4	84×36 = ... × .... =..........

Example (4) Find the product of the multiplication

1.
96
×
30
....
+
....
....

2.
74
×
60
....
+
....
....



3	53 × 20 .... + ...	4	67 × 40 .... + ...

Example (5) Find the product

1	37 60 ×	2	67 30 ×	3	26 50 ×	4	378 40 × ....

Example (6): - Complete	
1	If the price of a kilogram of apples is 63 pounds. How much is 60 kg ....
2	74people participated in the trip, each person paid 80 pounds. Find what they paid. ....
3	An ant travels 36 meters per hour, find the distance it travels in 70 hours. ....

Explore the remainder of the division
Patterns and place value in the division process

Unit Seven
Lesson (6 – 7)

•Division using different strategies

- **Division using different strategies**

30 ÷ 6 = 5

divisor Divisible quotient

- **to learn**

If 4 = 3 ÷ 12, we can deduce the division of 3 ÷ 1,200

- **The solution** 1,200 ÷ 3 = 400

Example (1): - Complete			
1	900 ÷ 3 = ...	2	550 ÷ 5 = ...
3	360 ÷ 4 = ...	4	400 ÷ 5 = ...
5	35 ÷ 6 = ... The remainder is	6	28 ÷ 5 = ... The remainder is ....
7	25 ÷ 2 = ... The remainder is	8	93 ÷ 9 = ... The remainder is ....
9	22 ÷ 2 = 11 The divisor is	10	48 ÷ 6 = 8 The divisor is ....
11	24 ÷ 3 = 8 The quotient is	12	26 ÷ 3 The quotient is ....
13	800 ÷ 4 = ...	14	6,400 ÷ 8 = ...
15	30,000 ÷ 5 = ...	16	12,000 ÷ 6 = ...
17	180 ÷ 2 = ...	18	630 ÷ 7 = ...
18	600 ÷ 3 = ...	20	4,500 ÷ 5 = ...

Exercises (4)

Example (1): - Complete			
1	700 ÷ 7 = ...	2	300 ÷ 5 = ...
3	320 ÷ 8 = ...	4	660 ÷ 6 = ...
5	37 ÷ 5 = ... The remainder is	6	31 ÷ 6 = ... The remainder is ....
7	47 ÷ 9 = ... The remainder is	8	42 ÷ 10 = ... The remainder is ....
9	55 ÷ 5 = 11 The divisor is	10	72 ÷ 9 = 8 The divisor is ....
11	42 ÷ 6 = 8 The quotient is	12	81 ÷ 8 The quotient is..................
13	1,600 ÷ 4 = ...	14	5,400 ÷ 9 = ...
15	48,000 ÷ 8 = ...	16	64,000 ÷ 8 = ...
17	240 ÷ 2 = ...	18	560 ÷ 7 = ...

Example (2): - Complete	
1	If the number of students in the class is 60 students and the physical education teacher wants to divide them into 6 teams evenly. What is the number of each team? ....
2	With a class of 360 crayons, the pupils want to divide them evenly by 6 teams How many pens are in each box? ....
3	64,000people need to go to work by metro. Find the number of metro cars if each car transports 80 people. ....
4	4,900people need to go to work in the morning, and they all want to ride the metro. The train consists of 7 carriages, and if each carriage accommodates 70 people, can all people ride the metro? ....

Unit Seven Lesson (8)

the area Model and Divsion

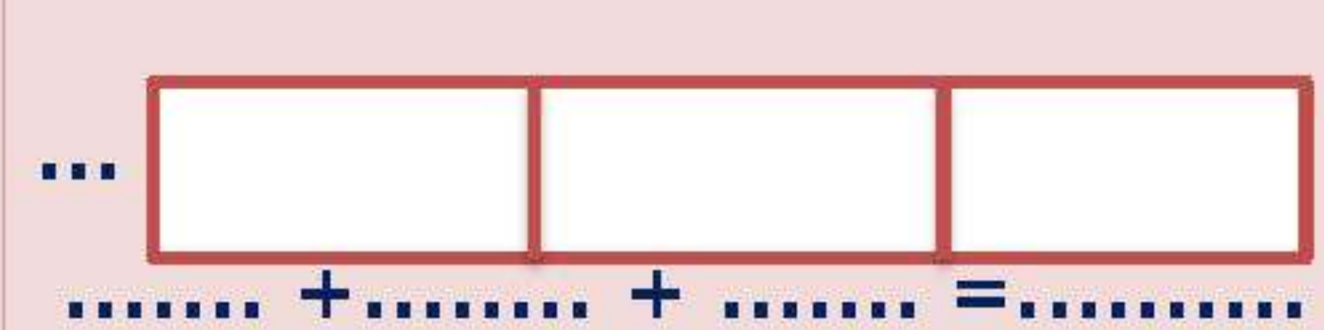
•Division using the area Model and Divsion

- •Division using the area Model and Divsion
- 527 × 5 = ...

5	5 × 100 = 500	5 × 5 = 25
	100 +	5

The divisor is 105 and the remainder is 2

Example (1) use the area Model to solve

1	72 ÷ 3 =........................... ... . + ... = ...	2	486 ÷ 2 =...........................  ... . +........ + ... =..........
3	3,600 ÷ 6 =..................... ... . + ... = ...	4	936 ÷ 3 =........................... ... . +........ + ... =..........
5	72 ÷ 3 =........................... ... . + ... = ...	6	765 ÷ 5 =........................... ... . +........ + ... =..........
7	69 ÷ 5 =..................... ... . + ... = ... remainder =.....................	8	512 ÷ 8 =........................... ... . +........ + ... =.......... remainder=.....................

Exercises (5)

Example (1) use the area Model to solve

1	93 ÷ 4 =..........................	2	455 ÷ 4 =.............................. ... .
3	32,000÷ 8 =.....................	4	613 ÷ 4 =.............................. ... .
5	75 ÷ 5 =.....................	6	540 ÷ 5 =.............................. ... .

Example (2): - use the area Model to solve

1	If the number of students in the class is 69 students and the physical education teacher wants to divide them into 3 teams equally. What is the number of each team? ....
2	With a class of 540 crayons, the pupils want to divide them evenly by 6 teams How many pens are in each box? ....
3	640 people need to go to work by metro. Find the number of metro cars if each car transports 8 people. ....

the partial quotient algorithm

Unit Seven
Lesson (9)

• the partial quotient algorithm

Steps to solve division using the partial quotient algorithm

- 649 ÷ 5 = ...

```
5 | 649   | 100
  - 500   |
    149   |
```

```
5 | 649   | 100
  - 500   |
    149   | 20
  - 100   |
     49   |
```

```
5 | 649   | 100
  - 500   |
    149   | 20
  - 100   |
     49   | 9
  -  45   |
      4   |
```

- **Quotient = 100 + 20 + 9 = 129 and the remainder is 4**

Example (1) Find the quotient

1	565 ÷ 5 = ... 5 ⟌ 565 Quotient = ... Remainder = ...	2	78 ÷ 3 = ... 3 ⟌ 78 Quotient = ... Remainder = ...
3	896 ÷ 4 = ... 4 ⟌ 896 Quotient = ... Remainder = ...	4	5,159 ÷ 9 = ... 9 ⟌ 5,159 Quotient = ... Remainder = ...
5	1,216 ÷ 3 = ... 3 ⟌ 1,216 Quotient = ... Remainder = ...	6	897 ÷ 4 = ... 4 ⟌ 897 Quotient = ... Remainder = ...

Exercises (6)

Example (1) Find the quotient			
1	453 ÷ 5 = ... Quotient = ... Remainder = ...	2	244 ÷ 6 = ... Quotient = ... Remainder = ...
3	792 ÷ 3 = ... Quotient = ... Remainder = ...	4	892 ÷ 6 = ... Quotient = ... Remainder = ...

Example (2): - Complete	
1	The juice shop owner owns 480 cups. If the shopkeeper wanted to use these cups for 3 months evenly, how many cups should he use each month ? ....

Division and multiplication

Unit Seven
Lesson (10-11)

- to estimate the quotient

- 54 ÷ 3 = ……………
- We search

  For a number of multiples of the divisor (3) between which the dividend falls (54)

  - The two numbers are 30 and 60
- Divide both numbers by the divisor (3).

  60 ÷ 3 = 20 ، 30 ÷ 3 = 10

  Therefore, the quotient is between 10 and 20

Example (1) Estimate the division and then find the actual division

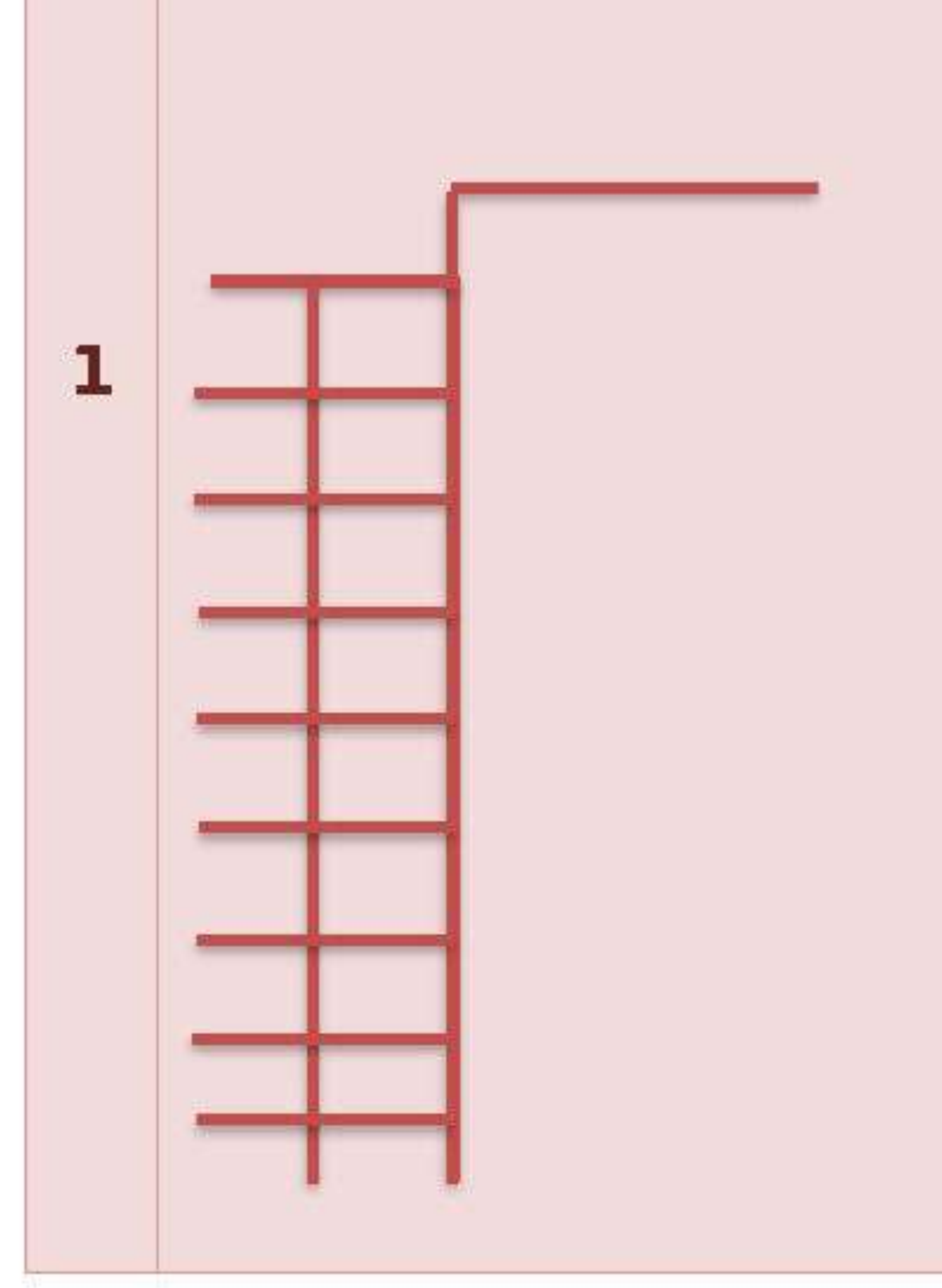
1

562 ÷ 8 = ……………………

…………………………………

…………………………………

the quotient between ….. ،……



2

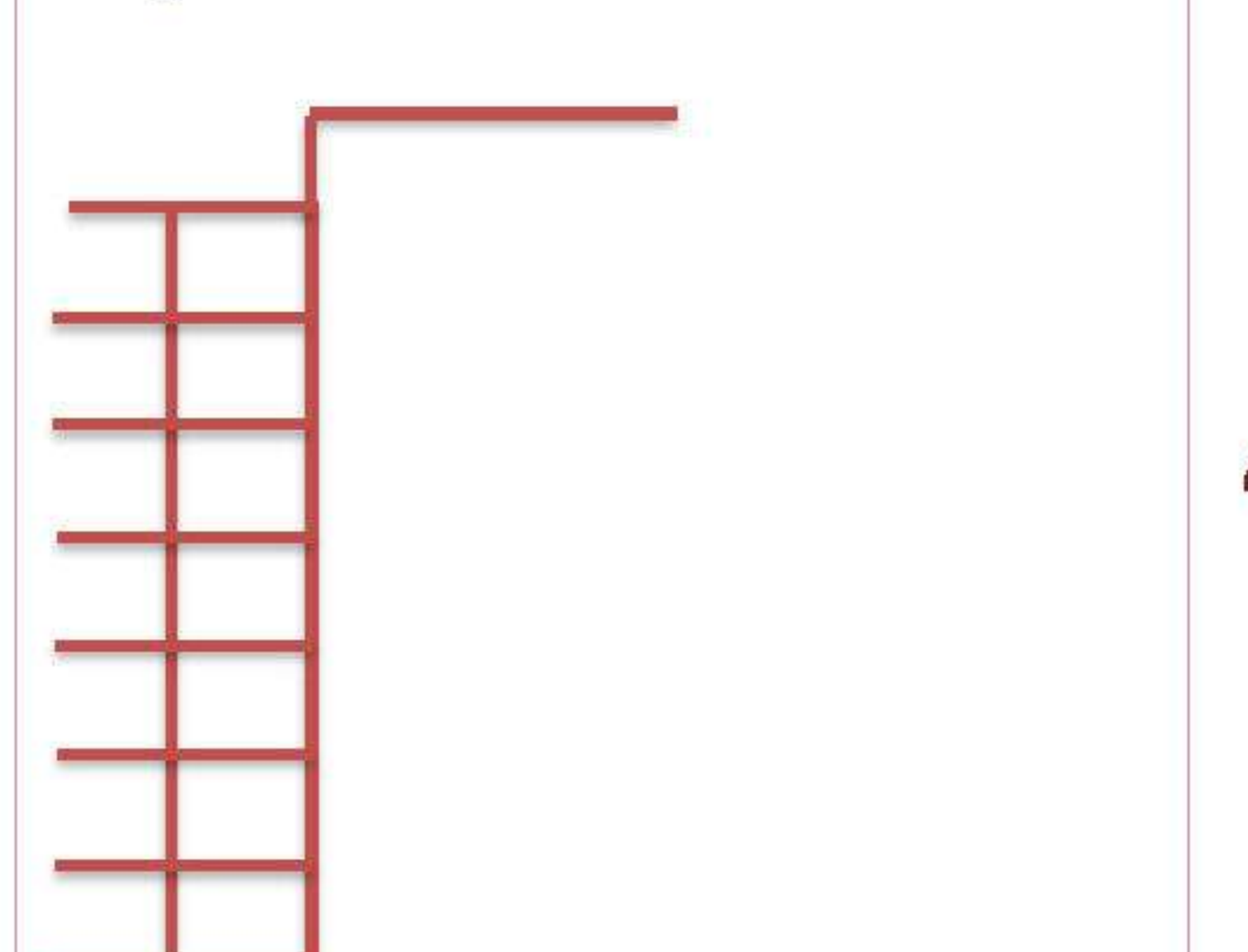
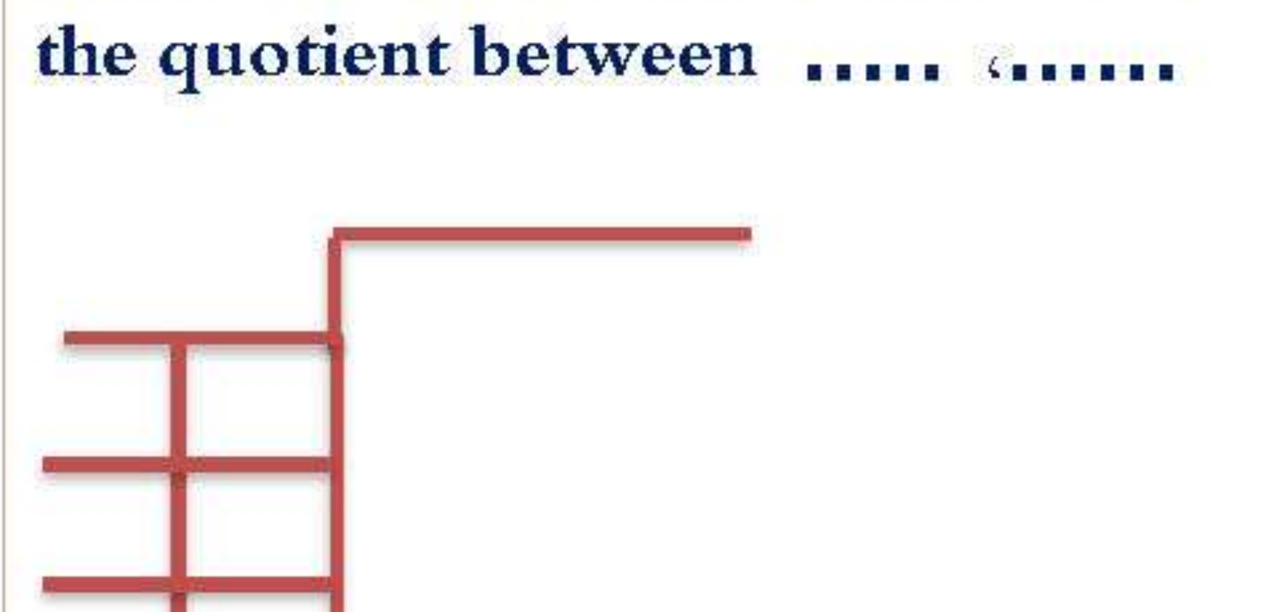
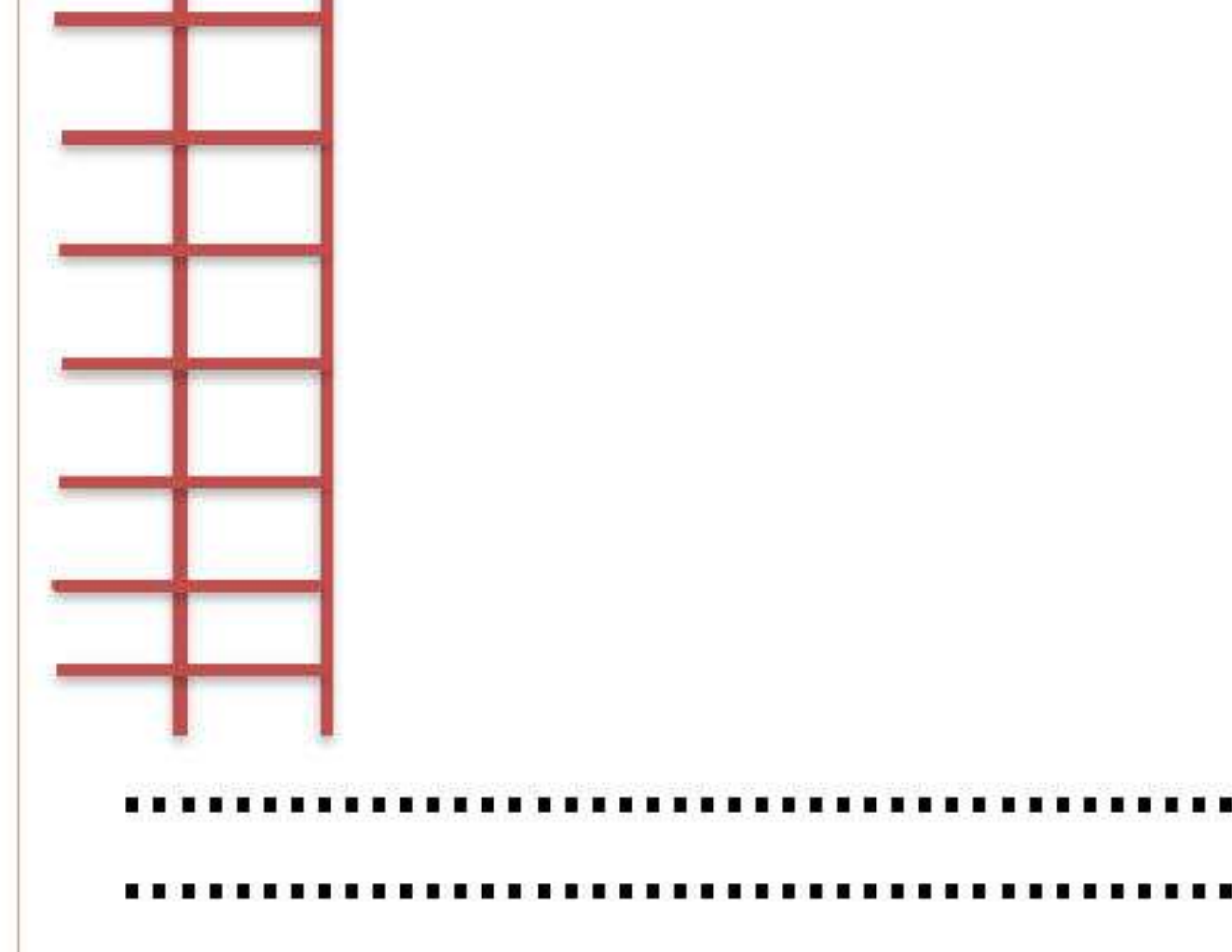
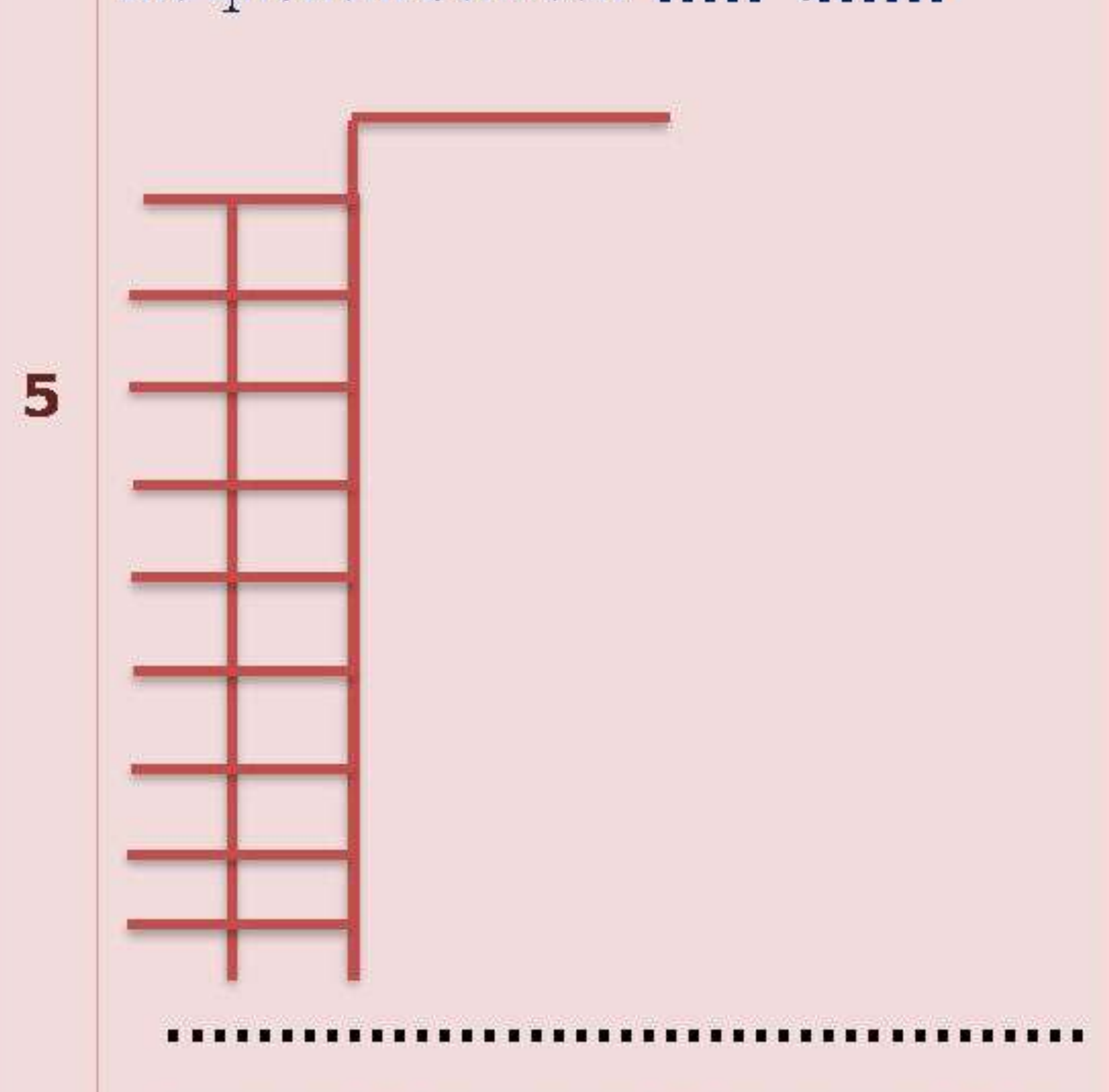
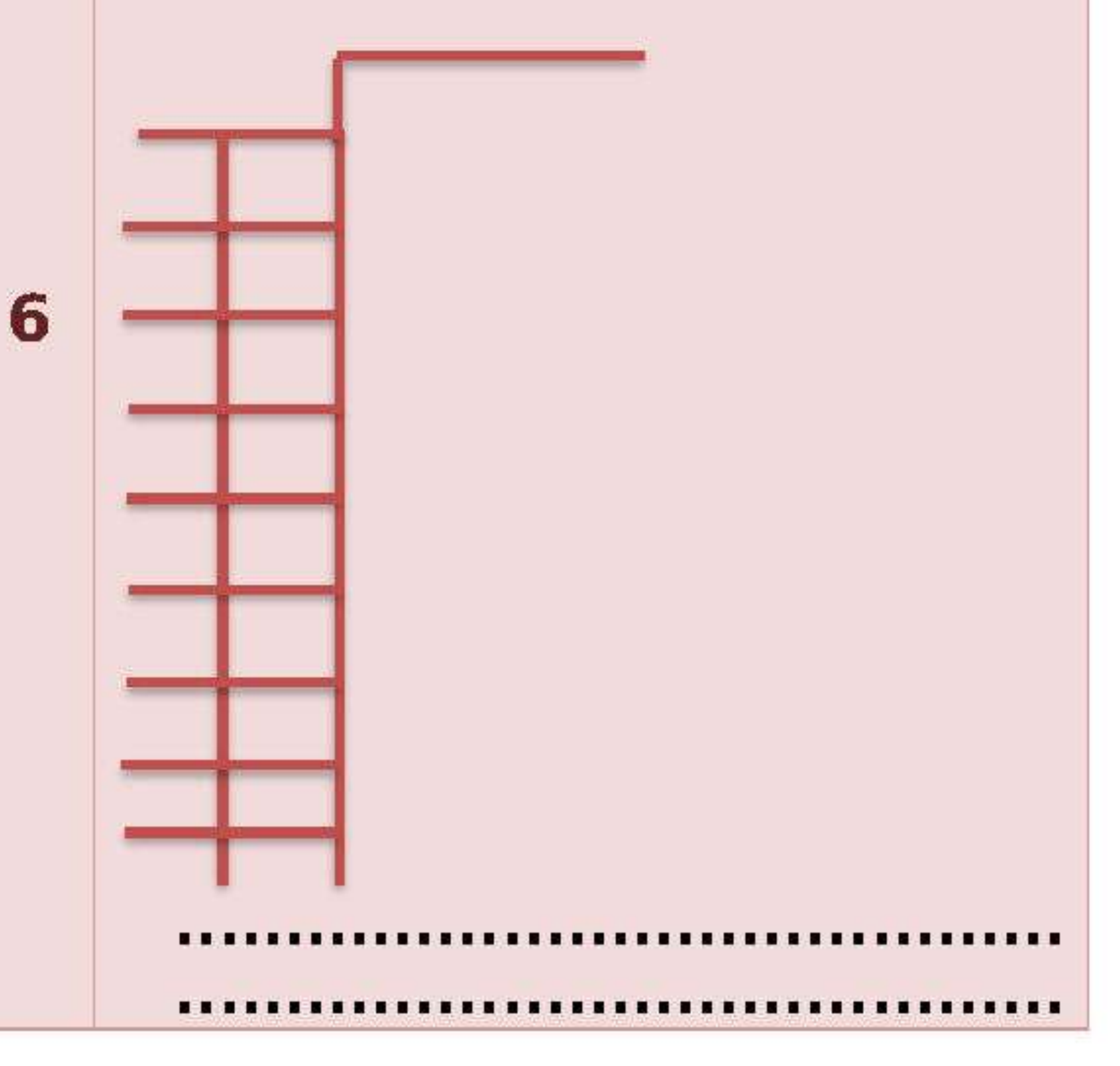


4,590 ÷ 3 = ……………………

…………………………………

…………………………………

the quotient between ….. ،……

3	$1,232 \div 8 =$ .... the quotient between ..... ،...... 	4	$9,102 \div 3 =$ .... the quotient between ..... ،......  ....
5	$789 \div 5 =$ .... the quotient between ..... ،...... 	6	$4,550 \div 5 =$ .... the quotient between ..... ،......  ....

Exercises (7)

Example (1) Estimate the division and then find the actual division

1

562 ÷ 8 = ...

....

....

the quotient between ..... ، ......



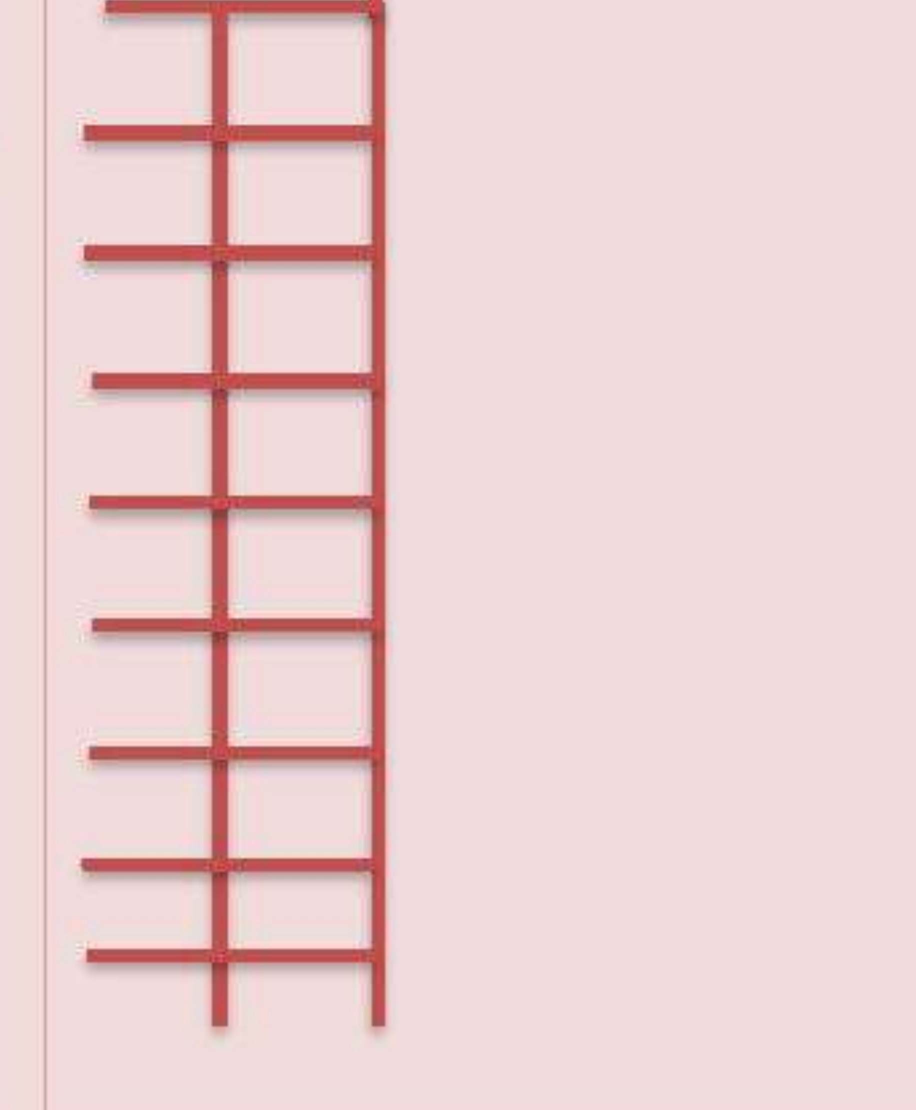
2

4,590 ÷ 3 = ...

....

....

the quotient between ..... ، ......

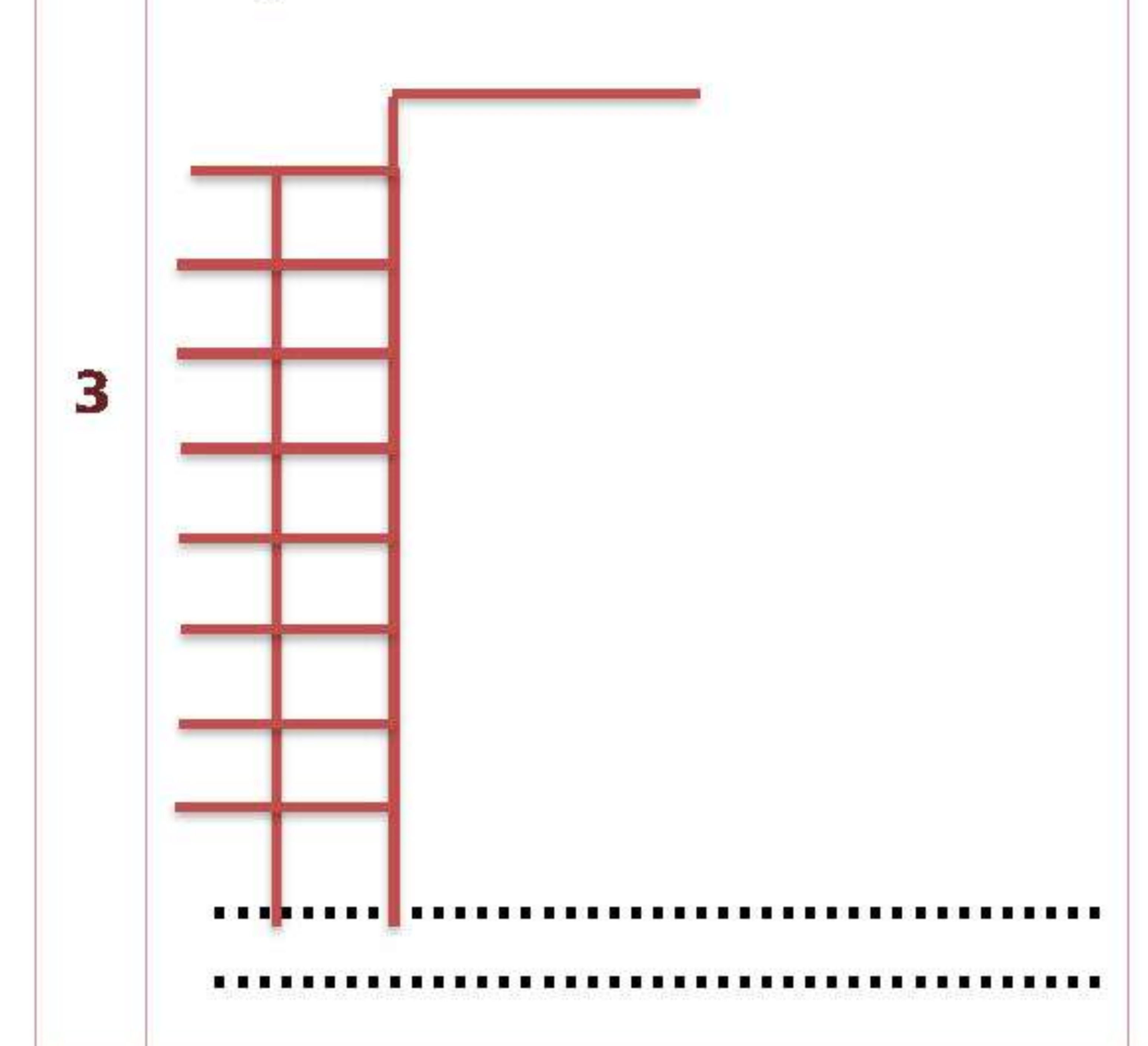


3

879 ÷ 6 = ...

....

the quotient between ..... ، ......



....

....

4

2,985 ÷ 2 = ...

....

the quotient between ..... ، ......

....

....

Example (2): - Complete	
1	Muhammad has 347 small glass balls. Kamal has 4 times what Hadi has and has 799 less aura than Kamal. How many marbles does Hala have? ....
	A car consumes 212 liters of gasoline in 4 months, what is the average consumption of the car in one month ? ....
3	A train has 360 seats for passengers. If the train consists of 9 carriages and each carriage has the same number of seats, how many passengers can sit in each carriage? ....

Exam (unit seven)

Example (1) Choose the correct answer

(1)	210 × 7 = ...						
(A)	2,107	(B)	1,470	(C)	1,574	(D)	1,740
(2)	If 58 = 5,800 ÷ 100 then the dividend is............						
(A)	58	(B)	100	(C)	680	(D)	5,800
(3)	4 × 700 = ...						
(A)	28	(B)	280	(C)	2,800	(D)	1,100
(4)	700 ÷ 7 = ...						
(A)	1	(B)	10	(C)	100	(D)	1,000
(5)	the corresponding form shows the multiplication of 7 x 36 The unknown value in the form is........................... 30 6 7 [210 | ....]						
(A)	6	(B)	7	(C)	42	(D)	420
(6)	The remainder of the division of 29 ÷ 3 is						
(A)	1	(B)	2	(C)	3	(D)	4
(7)	If 50 = 500 ÷ 10 , then the divisor is........................						
(A)	1	(B)	10	(C)	50	(D)	500

Example (2): - Complete

1	1,700 = ... × 17
2	812÷ 4 = ... Quotient is ....
3	9 × .... = (500 × 9) + (90 × 9) + (1 × 9)
4	1,600 ÷ 4 = ...
5	30 × 40 = ...
6	1,008 × 4 = ...
7	88 ÷ 5 = ... (And the remainder 3)
8	The division problem that expresses the area of a rectangle model is .... 2 [200 | 50 | 2] 100 25 1

Example (3) Choose the correct answer

(1)	5 | 40 | 5 | (area model, empty boxes)						45 × 5 = ...
(A)	2,250	(B)	225	(C)	1,125	(D)	1,000
(2)	464 ÷ 4 = ...						
(A)	123	(B)	53	(C)	116	(D)	113
(3)	100 × 40 = ...						
(A)	1,000	(B)	400	(C)	5,000	(D)	4,000
(4)	7 | 60: 420 | 5:						
(A)	543	(B)	837	(C)	455	(D)	562
(5)	The remainder of the division of 305 ÷ 30 is equal to...						
(A)	305	(B)	30	(C)	10	(D)	5
(6)	If 55 = 550÷ 10, then the divisor is............						
(A)	6	(B)	9	(C)	12	(D)	18
(7)	(to the nearest hundredth) .... ~ 125,258						
(A)	120,000	(B)	125,300	(C)	130,000	(D)	125,000

Example (4): - Complete as required

1	There are 864 pens, and the pens must be divided equally into 6 classes. How many pens will each class get? ....
2	Mina has 9 boxes of candles, in each box there are 12 candles, of which 23 were used. How many candles are left with Mina? ....
3	The father divided the amount of 145 pounds among his five children equally. What amount did each son get? ....
4	Muhammad has 148 Egyptian pounds that he wants to distribute equally to two of his brothers, what is the share of each of them ....

Unit eight
Lesson (1-2)

Arithmetic order of operations

- **Chart of the order of calculations .**

parenthesis → foundations → Multiplication and division From left to right → Addition and Subtraction From left to right

Example

1	8 – 2 + 3 = 6 + 3 = 9	2	9 – 6 ÷ 2 = 9 - 3 = 6	3	5 + 6 × 4 = 5 + 24 = 29

1- Find the Answer

1	5 × 6 × 3 = ... = ...	6	12 – 2 + 5 = ... = ...	11	9 + 8 – 2 = ... = ...
2	48 ÷8 × 4 = ... = ...	7	9 × 4 ÷ 6 = ... = ...	12	24 ÷ 6 ÷ 4 = ... = ...
3	16 – 8 ÷ 4 = ... = ...	8	8 – 2 × 3 = ... = ...	13	16 ÷ 2 – 7 = ... = ...
4	40 +8 × 4 = ... = ...	9	9 ÷ 3 × 6 = ... = ...	14	9 × (10 – 6) = ... = ...
5	7 + 70÷10 – 2 = ... = ...	10	36 ÷ 4 + 9 = ... = ...	15	6 × 3 - 3 × 5 = ... = ...

2- solve each puzzle .

1	☺ + ☺ + ☺ =18 ☺ + ☆ + ☺ = 23 ☆ + △ + △ = 17 △△ × ☺ + ☆☆ =........ ☆ = ... , △ =.... , ☺ =....	3	□ + □ + □ =12 △ + □ + □ = 18 ○ + △ + △ = 26 □ × ○ + △ =........ ○ = ... , △=.... , □=...
2	☺ + ☺ + ☺ =12 △ + ☺ + △ = 18 ☆ × △ + △ = 28 △△ + ☺☺ × ☆ =........ ☆ = ... , △ =.... , ☺ =....	4	□ + □ + □ =27 △ + □ + □ = 22 ○ + △ + △ = 18 □ + ○○ × △ =........ ○ = ... , △=.... , □=...

3- Solve the following problems .

1	Nashwa wants to bake blueberry muffins. You will put 6 berries in each pie.she bought We roasted 198 berries from the store. On her way home, Nashwa ate 18 berries. How many pies can we grill with leftover berries? ....

Exercise (1)

1- Find the Answer

1	21 ÷ 3 – 2 × 3 = ... = ...	3	25 ÷5 + 30 ÷ 3 = ... = ...	5	8 × 2 + 24 – 12 = ... = ...
2	8 ÷8 × 4 = ... = ...	4	5 × 4 ÷ 2 = ... = ...	6	8 × 3 + 6 ÷ 2= .... = ...

2- solve each puzzle .

1	☺ + ☺ + ☺ = 15 ☺ + ☆ + ☺ = 18 ☆ + △ + △ = 7 △△ × ☺ + ☆☆ =......... ☆ = ... , △ =.... , ☺ =....	2	□ + □ + □ = 9 △ + □ + □ = 10 ○ + △ + △ = 10 □ × ○ + △ =......... ○ = ... , △=.... , □ =...

3- Solve the following problems .

1	Adil loves chocolate. He received 246 chocolates for his birthday.He ate a piece of chocolate and wants to give the rest to 6 of his friends. How many pieces What chocolate would each friend get if they divided it equally ? ....

Exam (unit eight)

Example (1) Choose the correct answer

(1)	Which of the following steps should be taken first when finding the product of 2 + 3 x 5 ?.................						
(A)	addition	(B)	subtraction	(C)	multiplication	(D)	division
(2)	25 ÷ 5 – 3 = ...						
(A)	1	(B)	2	(C)	3	(D)	4
(3)	60 + 5 × 3 = ...						
(A)	2	(B)	5	(C)	75	(D)	11
(4)	30 – 4 × (2 + 1) =..............						
(A)	102	(B)	28	(C)	18	(D)	78
(5)	20 ÷ 5 + 5 - 2 = ...						
(A)	0	(B)	8	(C)	7	(D)	3
(6)	2+2+2+2+2+2 - 4 = ...						
(A)	6 × 2 – 4	(B)	10 – 4	(C)	12 + 4	(D)	2 × 2 – 4
(7)	10 × (5 – 5) = ...						
(A)	20	(B)	10	(C)	0	(D)	45

Example (2): - Complete

1	30 ÷ 5 + 5 × 8 = ...
2	60 + 20 – 50 = ...
3	5 × 6 ÷ 12 = ...
4	17 × (15 - 8) + 2 = ...
5	(3,600 + 240 + 18) = (600 + ... + 3) × 6 = ...
6	7 + (16 - 8) × 2 = ...
7	2 × 5 ÷ 2 + 3 = ...
8	3 × 2 + 49 ÷ 9 = ...

Example (3) Choose the correct answer							
(1)	9 ÷ 3 × 4 = ...						
(A)	3	(B)	9	(C)	12	(D)	20
(2)	10 – 9 ÷ 3 + 5 = ...						
(A)	8	(B)	12	(C)	9	(D)	11
(3)	4 × 3 + 2 = ...						
(A)	14	(B)	48	(C)	11	(D)	9
(4)	100 - 80 × 1 = ...						
(A)	5	(B)	6	(C)	20	(D)	7
(5)	6 × 2 ÷ 3 – 4 8						
(A)	>	(B)	<	(C)	=	(D)	otherwise
(6)	(25 – 5)÷ 4 + 2 = ...						
(A)	6	(B)	7	(C)	12	(D)	18
(7)	Which of the following operations is equal to the number 6 ?.........						
(A)	24 ÷ 6 – 2	(B)	3× 1 + 1	(C)	12 ÷ 6 + 3	(D)	18 - 3× 4

Example (4): - Complete as required	
1	Khaled surfs the Internet daily for 35 minutes after eating lunch, then studies for 65 minutes. What is the total number of minutes that Khaled surfs the Internet and studies if it lasts 5 days? ....
2	An ant colony has 36,000 ants, 4,500 ants went out to search for food, so how many ants remained in the colony? ....
3	Adil loves chocolate. He received 426 chocolates for his birthday.He ate a piece of chocolate and wants to give the rest to 5 of his friends. How many pieces .The chocolate each friend would have if they divided it equally? ....